

Monthly Report

What are the Reasons for and the Likely Consequences of Hassan Rouhani's Victory in the Iranian Presidential Elections?

What Drives Import Demand in EU Countries?

Thirlwall's Law may be Empirically Invalid

Property Claims: Kosovo Versus Serbia



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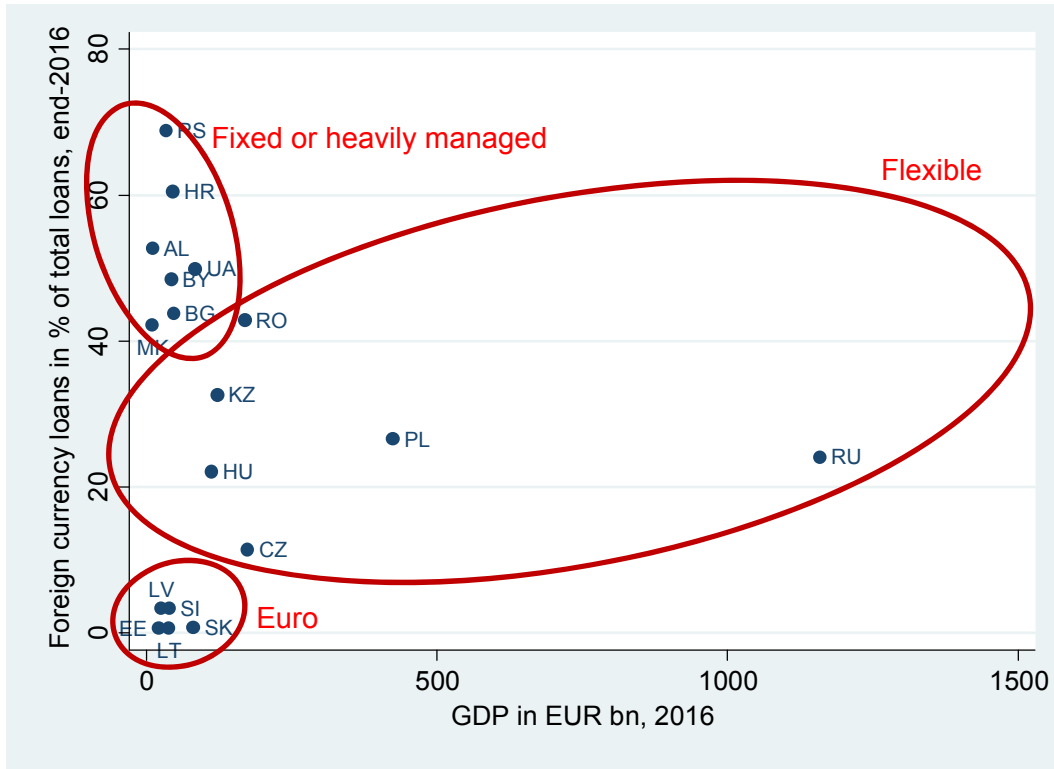
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Economic size, extent of dollarisation/euroisation, and exchange rate regime in Central, East and Southeast European countries



Source: wiiw Annual and Monthly Databases.

Opinion Corner: What are the reasons for and the likely consequences of Hassan Rouhani's victory in the Iranian presidential elections?

ANSWERED BY MAHDI GHODSI

IRANIANS HAIL MODERATE REFORMS

On 19 May 2017, Iranians cast their votes in the country's twelfth presidential election. The Islamic Republic of Iran has some features of democracy, which makes it very different from the monarchies in some neighbouring countries. Its republican system was designed and advocated in 1979 by the founder of the revolution, Ayatollah Ruhollah Khomeini. This time, the incumbent president Hassan Rouhani, aiming for moderate reforms and better relations with the international community, won his second term¹ in office with 19% of the votes, far ahead of his hardliner rival Ebrahim Raisi.

THE HARDLINER CANDIDATE

Mr Raisi has recently been appointed by the Supreme Leader, Ayatollah Ali Khamenei², to the largest tax-free charity of the Muslim world, as the custodian of the Imam Reza Holy Shrine (Astan Quds Razavi) in Mashhad. However, among Iranians, Mr Raisi is remembered first of all for his long reputation in the judiciary (the hardliner institution of Iran suppressing freedom), and as one of the four judges in the late 1980s ordering numerous executions and imprisonments³. He is still speculated to be a candidate for the next 'supreme leadership' (the chances of which would have increased if he had become president). He promised nothing less than six million new jobs, and increasing budget transfers to the three bottom deciles of income distribution during his presidency. This populist rhetoric was very similar to that of former president Mahmoud Ahmadinejad and aimed at attracting the poor population in the rural areas as well as Islamic hardliners, while naming no budgetary resource for such promises. Moreover, as addressed by Mr Rouhani in one of the televised debates, Mr Raisi's team of economic advisors are mostly identical with those of Mr Ahmadinejad, who had mismanaged the economy.

¹ https://www.theguardian.com/world/2017/may/20/iran-hassan-rouhani-set-for-landslide-in-huge-victory-for-reformists?utm_source=esp&utm_medium=Email&utm_campaign=GU+Today+main+NEW+H+categories&utm_term=26904&subid=15465578&CMP=EMCNEWEML6619I2

² Ayatollah Khamenei is the second Supreme Leader of Iran after the Ayatollah Ruhollah Khomeini, the founder of the Islamic Republic. The Supreme Leader of the Islamic Revolution is the head of state and the highest ranked authority in the Republic. He appoints the heads of main state organisations, the armed forces, the judicial system, the Expediency Discernment Council of the System, state television and broadcasting, etc. Additionally, he appoints six clerics out of twelve members of the Guardian Council directly while the six others are nominated by the head of the judicial system and elected by the parliament. The Guardian Council is in charge of the vetting process of all nationwide elections including the presidency, and the Assembly of Experts, who is mainly in charge of appointing and monitoring the Supreme Leadership.

³ <https://www.theguardian.com/world/2017/jan/09/ebrahim-raisi-conservative-cleric-iran-supreme-leader-khamenei>

REASONS BEHIND MR ROUHANI'S VICTORY

Mr Rouhani's victory is mostly indebted to the young population of Iran that were not yet eligible to vote in the previous presidential election (Table 1). Iran's demography has resulted in around six million new eligible voters above the age of 18 in the recent elections. While four and a half million votes added to the new casts, the turnout did not change from the previous presidential election. The results might suggest that the young generation with better connections to the outside world has chosen a progressive open society supporting the social reforms advanced by the reformists in Mr Rouhani's camp. The combined number of votes to four conservative candidates in the previous presidential election was slightly larger than that to the two conservative candidates in this election. This trend may indicate a further shift in society towards moderate reforms also in the future.

Table 1 / Vote structure of the presidential election – moderates vs. conservatives

	12 th election (2017)		11 th election (2013)		Difference in counts
	Count	%	Count	%	
Rouhani's votes	23,549,616	57.13%	18,613,329	50.71%	+4,936,287
Conservatives' combined votes	16,264,664	39.46%	16,399,403	44.68%	-134,739
Votes / turnout	41,220,131	73.07%	36,704,156	72.71%	+4,515,975
Registered voters / % of population	56,410,234	70.69%	50,483,192	65.06%	+5,927,042

Source: Author's calculations, Ministry of Interior of Iran, Statistical Centre of Iran, WDI World Bank.

Mr Rouhani's success was also in large part due to bringing back the centralised and oil-dependent economy to discipline, choosing a cabinet based on meritocracy⁴, and making a historical deal with the West removing the sanctions related to Iran's nuclear activities⁵. Despite high economic growth (6% last year), largely thanks to increased oil revenues (in spite of low prices), these achievements have not substantially affected Iranians' daily lives. Unemployment remains high, with a rate around 15-17% – a legacy of the government of Mr Ahmadinejad, who ignored the five-year development plans that were designed to respond to the enormous population growth during the 1980s.

OBSTACLES AHEAD

There are certain issues hindering Iran from becoming better involved in the international economy, enjoying advantages from foreign direct investment (FDI) and trade. These issues are mostly linked to the remaining non-nuclear sanctions from the United States. Mr Rouhani has promised to resolve these issues in his second term if he is allowed, in particular if mandated, and guided by the Supreme Leader, Ayatollah Ali Khamenei. Accusing Iran as the state sponsor of terrorism, testing ballistic missiles, and increased tensions with the US allies in the region are the major reasons for the ongoing US sanctions. Unless Rouhani manages to strike a new deal with the US on these issues, Iran might be facing even more severe consequences. The timing of the first foreign visit of Donald Trump to the US allies in the region, which coincided with the Iran presidential election, also sends such a signal. This visit was set to appease the US allies in the region after Obama's administration had left them unhappy by reaching a deal with Iran. The deal and the unsatisfactory relations with Obama triggered the Arab allies of the US

⁴ <https://wiiw.ac.at/iranians-head-to-polls-for-crucial-election-n-222.html>

⁵ Ghodsi, M. (2016), 'What are the consequences of the Iranian sanctions relief?', *wiiw Monthly Report*, No. 2, pp. 2-5.

to rush into a war in Yemen, raising the tensions with Iran which supports the Shiite opposition in the proxy war.

Also, the Iranian President – by the constitution the second top authority in the Islamic Republic – is usually less successful in his second term. The conservative institutional power might potentially sabotage the moderate government fulfilling its promises, which in turn may repulse disappointed voters from the next round of presidential election⁶. Given that the foreign policy is primarily directed by the first top authority, the Supreme Leader, it is most likely that Mr Rouhani will continue strengthening ties with the European Union⁷ rather than solving a four-decade animosity with the United States.

SUPPORT FROM THE EU

The EU's congratulations to Rouhani's election victory⁸, seen as a symbolic act appreciating the ongoing path of Mr Rouhani towards greater openness to the world, spell hope for the educated young population of Iran as concerns further economic development and political reforms in Iran in the future. Mr Rouhani's success will thus be conditional on attracting more FDI from the EU that could deliver a better environment for creating job opportunities for the young. Iran-EU trade relations have substantially improved in 2016 after the nuclear deal was signed⁹. Besides, it is worth mentioning that Iran's accession to the World Trade Organization (WTO) – which could provide Iran with better economic relations with the world – is supported by the EU while opposed by the United States. Not having a very strong voice contrasting the US, the EU, however, has remaining demands, which are being addressed on several occasions such as a meeting with Javad Zarif, the Iranian Minister of Foreign Affairs, in the European Parliament for questions and answers¹⁰. These remaining requests may potentially result in moderate domestic social reforms in Iran concerning human rights and freedom of speech¹¹. Other demands are related to regional issues resolving the Syrian crisis, and the fight against terrorism¹².

⁶ This was observed after the second term of the reformist president Mohammad Khatami (3 August 2001 – 3 August 2005), leading to a much lower presidential election turnout in 2005 (62.66% in 2005 compared to 77.1% in 2001) and resulting in the hardliner candidate Mr Ahmadinejad's victory.

⁷ <http://theiranproject.com/blog/2017/03/30/iran-eus-reliable-regional-partner-senior-diplomat/>

⁸ <http://www.politico.eu/article/eu-congratulates-rouhani-on-iran-election-win/>

⁹ <http://ec.europa.eu/trade/policy/countries-and-regions/countries/iran/>

¹⁰ <https://www.youtube.com/watch?v=zFE8RmPrxq4>

¹¹ <http://www.europarl.europa.eu/news/en/news-room/20160216IPR14517/human-rights-are-a-litmus-test-for-eu-iran-relations-say-foreign-affairs-meps>

¹² <http://www.reuters.com/article/us-france-iran-idUSKBN18I1SC>

What drives import demand in EU countries?

BY VASILY ASTROV

INTRODUCTION

The importance of income elasticities of demand for exports and imports has been generally recognised at least since the seminal paper by Thirlwall (1979) which postulated that in the long run, no economy can grow faster than the growth rate of its exports divided by the income elasticity of its demand for imports. This relationship has become known as 'Thirlwall's Law'. In a simple Thirlwall model, a GDP growth higher than that would inevitably lead to excessive import demand and progressively worsening current accounts, which sooner or later would end up in a balance-of-payments crisis requiring a real income adjustment (i.e. a growth slowdown or recession) to restore the external balances. In turn, the growth rate of a country's exports is itself a function of the income elasticity of demand for these in the country's export destinations. In this way, the size of the income elasticities of demand for exports and imports can be seen as crucial for the country's long-term economic prospects. Put differently, a country facing an unfavourable structure of income elasticities (that is, a high income elasticity of import demand and a low income elasticity of demand for its exports) must either grow at a lower rate than its trading partners or else experience a progressive worsening of its trade/current account.¹ At the same time, Thirlwall's theory suggests that in the long run, the price elasticities of export and import demand (i.e. the elasticities with respect to the real exchange rate) are low and insufficient to correct the external imbalances via real exchange rate adjustments.

In this vein, it has been argued that the prospects for developing countries to grow and catch up with the more advanced economies are constrained by the unfavourable structure of their income elasticities. While the income elasticities of demand for their main export products (typically raw materials or agricultural commodities) are low and constrain the growth of the developing countries' exports, the income elasticities of their demand for imported goods (which are generally more sophisticated) tend to be much higher, contributing to a marked import growth and creating a 'balance-of-payments constraint' (Thirlwall, 2011). A similar argument was advanced with respect to the Central and East European (EU-CEE) economies at the onset of their transition to the market economy (see e.g. Landesmann and Pöschl, 1995).

This article attempts to measure the income elasticities of import demand in the EU countries, which could shed light on the empirical relevance of Thirlwall's Law.

¹ Krugman (1989) argued that even a country facing unfavourable income elasticities will not necessarily experience this type of problems as long as it succeeds in expanding its export market share, for instance, thanks to the introduction of new export products. This argument hardly contradicts Thirlwall's theory: expanding export market shares could be interpreted as one manifestation of high income elasticity for exports.

ESTIMATION METHODOLOGY AND FINDINGS

There have been a number of econometric studies aiming at estimating the determinants of import demand and the size of income and price elasticities (see e.g. Wu, 2011; Kvedaras, 2005; Reininger, 2007; Bahmani-Oskooee et al., 2013; Lanzafame, 2011). Given the long-term nature of the underlying relationships, they have often involved a co-integration approach (usually in the time-series context), with error-correction models capturing the short-run import dynamics. Typically, these studies have found that long-run income elasticities of import demand – in contrast to price elasticities – tend to be large and significant, and the Thirlwall's Law holds well to explain the countries' growth performance.

Our approach to estimating the import demand function broadly follows the Lanzafame (2011) methodology: it is also based on panel data and uses the auto-regressive distributed lag (ARDL) estimation approach developed by Pesharan, Shin and Smith (2001). However, unlike the Lanzafame approach, it is based on data for the 28 EU countries rather than OECD and thus covers EU-CEE countries which are not OECD members. In addition, it has a different underlying time period: 1990-2012, albeit starting later for a number of countries, thus resulting in an 'unbalanced' panel.

All variables underlying our estimations (in logs) are taken from Eurostat or calculated using Eurostat data, and include real GDP, real imports (of goods and services), and two alternative definitions of relative import prices: (i) the ratio of import deflator to GDP deflator (P1), and (ii) the ratio of import deflator to producer price index (P2). Both measures of relative prices have their advantages and disadvantages. P1 has the advantage that it captures the price dynamics in the whole economy, including services. This is, however, simultaneously also its disadvantage: not all services are tradable, implying that this measure of relative prices may not be fully adequate to measure the external competitiveness of the economy. P2 has the advantage that it does not include the non-tradable sector of the economy, as it covers only industry. However, by excluding services (other than those used as inputs in industrial production), it captures only one part of the tradable sector. All in all, while P1 is arguably too broad an indicator, P2 is, by contrast, too narrow.

The results of testing for the presence of unit roots (following the Im-Pesaran-Shin 2003 procedure) suggest that some of the variables under consideration are stationary while others are integrated of order one. In this case, an appropriate approach to test for co-integration is to use the ARDL estimation technique, which does not require variables to have the same order of integration and allows parsimonious modelling of the short- and long-run model dynamics within the framework of the same equation (see Pesaran, Shin and Smith, 2001).

Our ARDL fixed-effects panel-data approach looks as follows:

$$\Delta \log imports_{it} = k + \sum_{n=t-1}^{t-2} \alpha_n \Delta \log imports_{i,n} + \sum_{n=t}^{t-2} \beta_n \Delta \log gdp_{i,n} + \sum_{n=t}^{t-2} \gamma_n \Delta \log relimpprice_{i,n} + a * \log imports_{i,t-1} + b * \log gdp_{i,t-1} + c * \log relimpprice_{i,t-1} + \mu_i + \varepsilon_{it}, \quad (1)$$

where i is country, t is year, k is a constant, μ is a country fixed effect, and ε is an error term.

Thus, this specification includes both the differenced and the level variables, with the differenced variables being included with lags. Given the annual nature of observations, the chosen number of lags (two) should be sufficient to capture the longer-run dynamics of the model.

First, we run equation (1) with P1 as the measure of the relative price. The idea behind is to obtain the estimates of the long-run coefficients of the lagged level variables a , b and c . Their joint significance would signal the existence of a long-run co-integration relationship between imports, GDP and the relative import price. The F-test of joint significance of a , b and c yields $F = 6.97$, which is higher than the upper bound critical value simulated by Pesaran and Shin (4.85) at 5% significance level. Therefore, we can conclude that there is a long-run co-integrating relationship between these three variables.

In the next step, we run a co-integrating regression using level variables only, in order to obtain the estimates of the long-run coefficients:

$$\log imports_{it} = k + \alpha \log gdp_{it} + \beta \log relimpprice_{it} + \mu_i + \varepsilon_{it}, \quad (2)$$

the results of which are presented in the second column of Table 1. Both GDP and the relative import price have the 'right' coefficients and are found to be significant determinants of import dynamics: an increase in GDP by 1% boosts imports by about 1.7%, while a 1% rise in the price of imports (relative to the GDP deflator) reduces them by around 0.6% *in the long run*.

These results are only partly consistent with the findings of earlier studies: while the statistical significance of the income coefficient is confirmed by virtually all previous studies, the significance of the price coefficient is not. This outcome may be due to the inclusion of the EU-CEE economies, which due to their sheer number have a relatively high weight in our panel. The relative price movements in EU-CEE countries over the past two decades were much more pronounced than in Western Europe and – unlike in Western Europe – exhibited in most cases a clear trend of real exchange rate appreciation (i.e. falling relative import prices) which boosted imports in addition to GDP growth. Partly, this real appreciation trend reflects the initial under-valuation of many EU-CEE currencies on the back of low confidence and in many cases hyperinflation. More importantly, however, it has been the outcome of their strong economic growth and progressive real income convergence towards the Western European levels up until the 2009 global economic crisis.

After estimating the long-run relationship from equation (2), we can now build a short-run error-correction model by substituting the residuals from regression (2) into equation (1) as an error-correction term (*ect*). In this way, we obtain a short-run model specification which looks as follows:

$$\Delta \log imports_{it} = k + \sum_{n=t-1}^{t-2} \alpha_n \Delta \log imports_{i,n} + \sum_{n=t}^{t-2} \beta_n \Delta \log gdp_{i,n} + \sum_{n=t}^{t-2} \gamma_n \Delta \log relimpprice_{i,n} + ect_{it} + \mu_i + \varepsilon_{it}. \quad (3)$$

Here, the error-correction term can be interpreted as a short-run mechanism which corrects any deviation from the long-run equilibrium relationship established in equation (2). The short-run specification (3) of the import dynamics incorporates this effect, but it also includes the differenced

explanatory variables (GDP and the relative import price), as well as the lagged differences of imports themselves – similarly to equation (1).

Table 1 / Import demand function in the EU countries estimated with ARDL approach (in logs)

	I	II
Long-run co-integrating relationship	imports (real)	imports (real)
constant	-0.30 (0.35)	-1.71 (0.38)
real GDP	1.68 (0.03)	1.84 (0.04)
P1 (import deflator/GDP deflator)	-0.62 (0.05)	
P2 (import deflator/PPI)		-0.46 (0.05)
Short-run error-correction model	Δimports (real)	Δimports (real)
constant	0.01 (0.00)	0.01 (0.00)
Δ real GDP	1.66 (0.05)	1.72 (0.05)
Δ P1	-0.02 (0.05)	
Δ P2		-0.06 (0.06)
Δ imports (t-1)	0.84 (0.03)	0.91 (0.04)
Δ real GDP (t-1)	-0.92 (0.11)	-1.18 (0.12)
Δ P1 (t-1)	-0.07 (0.06)	
Δ P2 (t-1)		-0.02 (0.08)
Δ imports (t-2)	-0.25 (0.02)	-0.28 (0.02)
Δ real GDP (t-2)	0.14 (0.06)	0.30 (0.07)
Δ P1 (t-2)	0.06 (0.03)	
Δ P2 (t-2)		0.00 (0.04)
error-correction term	-0.01 (0.02)	0.03 (0.02)

Source: Own calculations.

The results of our error-correction estimation are presented in the second column of Table 1. As displayed, GDP growth turns out to be a highly significant determinant of import dynamics also in the short run, with the obtained coefficient (1.65) nearly identical to that in the long-run relationship. However, unlike in the long run, the short-run coefficient on relative prices – though having the ‘right’ sign – is statistically insignificant, possibly providing further evidence of the above-mentioned trend real appreciation of EU-CEE countries’ currencies. Further, our results do not suggest the presence of the so-called ‘J-curve effect’, which stipulates that because of the need to renegotiate existing trade

contracts in response to an exchange rate shock, the movements in relative prices (real exchange rates) yield 'expected' effects on imports only with a time lag. The coefficient of the change in the relative import price lagged by one year is insignificant as well, while the coefficient on the second lag – though statistically significant – has the 'wrong' (positive) sign. Finally, the coefficient on the error-correction term is statistically not significant, although it has the expected negative sign, implying a mean-reverting behaviour of import demand in the short run.

Finally, we estimate the import demand function using the second measure of the relative import price (P2). We follow the above-outlined estimating procedure (1) to (3), but substitute P2 for P1. Our estimation results are reported in the last column of Table 1 and suggest similar findings in qualitative terms. Similar to our findings from the estimations using P1, both real GDP and the relative import price are found to be statistically significant predictors of imports dynamics in the long run, but only GDP is found to be significant in the short run. Further, we found no evidence of the short-run error-correction mechanism: not only is its coefficient statistically insignificant (as in the former specification), but it has in fact the 'wrong' (positive) sign.

CONCLUSIONS

All in all, our results are only partly consistent with the previous findings. On the one hand, they confirm that income changes have been an important determinant of import demand in the EU countries both in the long and in the short run. These findings square well with Thirlwall's Law. However, unlike most previous studies, we find that relative prices matter as well – at least in the long run. This outcome may be due to the inclusion into the panel of EU-CEE economies: these countries experienced a trend real exchange rate appreciation (i.e. falling relative import prices) over the past two decades, which accompanied their catching-up process. Besides, we find no evidence of a statistically significant error-correction mechanism, possibly suggesting that the long-run co-integrating relationship between imports, GDP and relative prices in the EU countries has not been very strong.

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Thirlwall's Law may be empirically invalid

BY LEON PODKAMINER

THE ORIGINAL THIRLWALL'S LAW

Thirlwall's Law (Thirlwall, 1979) is a conceptually simple approach to international macroeconomic analysis (see, for example, Thirlwall, 2011 and Soukiazis and Cerqueira, 2012 for relatively recent reviews of the Law's extensions and applications). One of its underlying assumptions is that long-term growth in small open economies must respect the balance-of-payments constraint. The constraint, taking the form of an equation phrased in terms of conventional trade elasticities, is to reflect the existence of a balance-of-payments (or rather balance-of-trade) limit on the growth rate of output.

The assumptions behind the original Law are quite straightforward. In the spirit of the age-old traditions ('absorption and elasticity approaches') it is postulated that a small open economy's foreign trade can be properly described by two conventional 'demand equations', one for its exports (X), the other for its imports (M), both in real terms.

The equations are defined as follows:

$$X = A_x(P/EP^*)^{-\epsilon_x} Y^{\eta_x} \quad (1)$$

$$M = A_m(EP^*/P)^{-\epsilon_m} Y^{\eta_m} \quad (2)$$

where P and Y are the 'home' country's price and real GDP levels; P* and Y* are price and real GDP levels of the 'foreign' country (it is assumed that the 'home' and 'foreign' countries trade exclusively with each other); E is the home country's exchange rate (its currency per unit of the foreign country's currency); A_x and A_m are non-negative constants; and P/EP* is the real exchange rate. All constant elasticity parameters (ε and η) are assumed to be positive (-ε_x, -ε_m are price elasticities of exports and imports, respectively; η_x and η_m are income elasticities of exports and imports, respectively). The Marshall-Lerner condition (ε_x+ε_m≥1) is usually assumed (or expected) to hold.

From the postulate that trade must be balanced 'in the long run' (i.e. the *value* of exports must be equal to the *value*, in foreign currency terms, of imports: PX=EP*M), it is then tacitly concluded that in the long run the *rates of growth* of values of exports and imports must be equal to each other. This conclusion gives rise to the following equation:

$$(\epsilon_x + \epsilon_m - 1)(p - p^* - e) = \eta_m y - \eta_x y^* \quad (3)$$

where the lower-case symbols (p, p*, e, y, y*) represent growth rates of the variables P, P*, E, Y, Y* respectively.

Equation (3) is equivalent to the following one:

$$y = [(\varepsilon_x + \varepsilon_m - 1)(p - p^* - e) + \eta_x y^*] / \eta_m \quad (4)$$

Various conclusions are customarily drawn from (3) and/or (4). For example, suppose that there is one currency shared by both countries so that $e=0$ and, in addition, $p \approx p^*$ (there is no substantial inflation differential). Then

$$\eta_x y^* = \eta_m y \quad (5)$$

or

$$y = (\eta_x / \eta_m) y^* \quad (6)$$

Equations (5) and (6) are valid also when $(\varepsilon_x + \varepsilon_m - 1) = 0$ or under 'elasticity pessimism' extensively discussed in the literature.

Equation (6) is commonly referred to as Thirlwall's Law. It relates the rate of growth of a country's GDP to the rate of growth of GDP of its foreign partners combined (or of the rest of the world). According to (6), the lower the country's income elasticity of demand for imports η_m and the higher the world's income elasticity of demand for its exports η_x , the faster its (*externally balanced*) GDP growth. Observe that (5) implies the equality of the real *rates of growth* of exports and imports – but not the equality of (changing) volumes of exports and imports.

THE SATISFACTION OF THE LAW IS NECESSARY BUT NOT SUFFICIENT FOR GROWTH TO BE EXTERNALLY BALANCED

Balanced trade, i.e. the satisfaction of

$$PX = EP^*M$$

implies the satisfaction of equation (3) – and of the equations eventually derived from (3). But the satisfaction of (3) does not *per se* imply the satisfaction of the equation $PX=EP^*M$, i.e. of trade being balanced. Equation (3) is a reduced form derived from equations (1)-(2) under the *additional* assumption of trade being balanced.

The condition that is *both* sufficient and necessary for growth to be externally balanced is, of course, $PX=EP^*M$. By plugging (1) and (2) into it, one obtains the following expression

$$PA_x (P/EP^*)^{-\varepsilon_x} Y^{*\eta_x} = EP^* A_m (EP^*/P)^{-\varepsilon_m} Y^{\eta_m} \quad (7)$$

Taking logarithms of the expressions on both sides of (7) and rearranging the result, one obtains an equation relating $\log(Y)$ to $\log(Y^*)$:

$$\log(Y) = (1/\eta_m) \log(A_x/A_m) - ((\varepsilon_x + \varepsilon_m - 1)/\eta_m) \log(P/EP^*) + (\eta_x/\eta_m) \log Y^* \quad (8)$$

Assuming that equations (1)-(2) hold (for some concrete values of the parameters), equation (8) describes $\log(Y)$ as a function of $\log(Y^*)$. Notice that, unlike equation (3), equation (8) *guarantees* the satisfaction of the balanced-trade requirement, all along, while (3) guarantees only the equality of the growth rates of exports and imports.

The assumption on trade being balanced is of course violated for practically all countries, and most of the time too. But common sense dictates that trade cannot go imbalanced (either way) *indefinitely*. From this fact it follows that (8) is interpreted as a kind of *locus of balanced positions* for the variables (Y , Y^* and P/EP^*) in question. The observed values of the variables in question may lie off the curve given by (8), reflecting imbalanced trades. But there should be a *tendency* for such imbalances to diminish sooner or later. It is in this sense that one can talk of the *long-run tendency* to balanced trade – and of real output growth being consistent with such a trade. If the assumptions underlying equations (1) and (2) (plus the notion that there is a *tendency* for imbalances to correct themselves) are empirically correct, then the logarithms of Y , Y^* and (P/EP^*) ought to stand in a long-run relationship, or to be *co-integrated*.

The presence of co-integration of Y , Y^* and (P/EP^*) means that the parameters of (8) are such that the trade imbalances represented by

$$[\log(Y) - (1/\eta_m)\log(A_x/A_m) + ((\varepsilon_x + \varepsilon_m - 1)/\eta_m)\log(P/EP^*) - (\eta_x/\eta_m)\log(Y^*)]$$

show the *tendency* to diminish following occasional 'disturbances'. The tendency of the above difference to diminish would then also lend credence to equation (3) – and to equations derived from it (such as (4) or (6)).

To avoid misunderstanding, the failure to confirm the existence of co-integration between $\log(Y)$ and $\log(Y^*)$ does not necessarily mean that the actual output growth has *not* respected the external balance constraint. 'Normal' countries have to respect the external trade-balance constraint in the longer run – no matter how their export and import functions are functionally defined. The failure to confirm the existence of co-integration may mean that the basic forms of the demand equations (1) and (2) – from which (8) is derived – are incorrect.

TESTING FOR CO-INTEGRATION

Assuming the presence of co-integration of the logarithms of Y , Y^* and P/EP^* , one is able to say something about the parameter estimates – without engaging into *separate* estimations of export and import functions which are usually based on the logarithmic forms of (1)-(2).¹

Observe that, if co-integration of the logarithms of Y , Y^* and P/EP^* is confirmed (following the application of some specific econometric tests) and $\log(Y)$ is assumed to be determined by $\log(Y^*)$ (and eventually in addition also by $\log(P/EP^*)$), and not the other way round, then there are parameters (call them c_1 , c_2 , c_3) to estimate from the following regression:

¹ Equation (8) does not require information on (or estimates of) separate trade elasticities featuring in (1) and (2). This must be considered an important advantage. The calculation of trade volumes – needed for separate estimations of these elasticities – is a cumbersome business as it requires the application of reliable price deflators for exports and imports.

$$\log(Y) = c_1 + c_2 \log(P/EP^*) + c_3 \log(Y^*) + \text{error term} \quad (9)$$

It follows that, if the equations (1)-(2) are the correct formulae for the export and import functions *and* trade has had the tendency to be balanced, then the parameters in (9) may be given specific meanings. The c_1 parameter would then correspond to $(1/\eta_m)\log(A_x/A_m)$ in (8); c_2 to $-(\varepsilon_x + \varepsilon_m - 1)/\eta_m$; and c_3 to (η_x/η_m) .

If co-integration is *not* confirmed, there is really no point in trying to estimate the specific elasticities and parameters in equation (8) (and in (9)), by *any* method. Absence of co-integration would mean that the basic model (1)-(2) is inappropriate – and/or that the assumption is not confirmed that there has been a *tendency* for imbalances to correct themselves, or both. Consequently, in such situations (3)-(6) are also irrelevant.

Of course, even if co-integration between the logarithms of Y , Y^* and (P/EP^*) is not rejected, the empirical results will not always make sense. For example, the eventual parameters of the 'co-integration equation' (9) may have apparently 'wrong' signs (e.g. the estimated ratio of income elasticities (c_3) may turn out to be negative or the estimate of c_2 (equal to $-(\varepsilon_x + \varepsilon_m - 1)/\eta_m$) may turn out to be positive, contradicting the Marshall-Lerner condition).

CO-INTEGRATION OF THE LOGARITHMS OF Y , Y^* AND P/EP^* SEEMS TO BE QUITE RARE

This Note reports the main findings of co-integration tests conducted, by means of the Autoregressive Distributed Lags 'Bounds' method in the time series context, for a sample of countries for which reasonably long time series of data on Y , Y^* and P/EP^* are available. The sample consists of 58 countries², with the data extending (for most countries) from 1960 through 2012 and coming from the World Development Indicators (WDI), which are accessible on the World Bank web page. A country's GDP (Y) is measured at constant 2005 USD. GDP of the 'rest of the world' (Y^*) is measured as the difference between global GDP (again measured at constant 2005 USD) and Y . The Real Effective Exchange Rate Index (REER) series reported by WDI are substantially shorter than the Y and Y^* series. They do not start before 1975, while for some countries they start later and for some other countries they are not reported at all. The P/EP^* measure used instead of REER is calculated from the WDI series of real and nominal GDP (the former expressed in constant 2005 USD, the latter in current USD). This measure (called Π henceforth) is actually closer to the original P/EP^* concept.³

It is assumed that $\log(Y)$ is the dependent variable, potentially determined by $\log(Y^*)$ (and, additionally, possibly by $\log(\Pi)$). This is justified by the fact that any country's GDP is a more or less small fraction of the GDP of the rest of the world and thus does not affect it, so that there should be no endogeneity issues.

² Argentina, Australia, Austria, Bangladesh, Belgium, Bolivia, Brazil, Canada, Chile, China P.R., Colombia, Cyprus, Denmark, Egypt, Ecuador, Finland, France, Greece, Germany, Iceland, India, Indonesia, Iran, Israel, Italy, Japan, Kenya, Korea, Madagascar, Malaysia, Mexico, Namibia, Netherlands, New Zealand, Nigeria, Norway, Pakistan, Panama, Paraguay, Peru, Philippines, Portugal, Senegal, South Africa, Spain, Sweden, Switzerland, Tanzania, Togo, Tunisia, Turkey, Uganda, UK, USA, Venezuela, Vietnam, Zambia and Zimbabwe.

³ Let Y_{nom} and Y^*_{nom} be nominal GDP levels (at current USD) of a country and its 'rest of the world'. Π is then defined as $(Y_{nom}/Y)(Y^*_{nom}/Y^*)$. Observe that $\Pi_{2005}=100$ in each case. In most cases the Π and REER series turn out to be quite strongly correlated.

Testing for co-integration between $\log(Y)$ and $\log(Y^*)$ and $\log(\Pi)$ reported below was conducted by means of the ARDL method. The ARDL approach requires that the variables considered are not $I(2)$. That requirement is easily satisfied as evidence (following the application of ADF unit root tests) is strong that all $\log(Y)$ and $\log(Y^*)$ series are $I(1)$ while $\log(\Pi)$ series are either $I(1)$ or possibly even $I(0)$. The second essential requirement is that the residuals to the eventual ARDL models are free from autocorrelation. That requirement is safely satisfied for all countries – whether or not the analysis rejects the existence of co-integration.⁴

ARDL was first applied to the equation abstracting from the exchange rate term ($\log(\Pi)$):

$$\log(Y) = c_1 + c_3 \log Y^* + \text{error term}$$

The F-statistics alone, calculated as prescribed by Pesaran et al. (2001), rejects (at the conventional significance levels) the null of 'no long-term relationship' for 27 countries. But for 6 of these countries the estimates for c_3 turn out to be negative – which does not seem to make sense. For some other countries (including China, India, Italy, USA) the estimate for the so-called error-correction (EC) term turns out to be positive – thus indicating the non-existence of long-term co-integration. According to the t-statistics (which is the second 'bounds' testing statistics associated with ARDL) only 10 countries (out of the 27 passing the F-statistics test) qualify for a long-term co-integration relationship. Estimated c_3 for these countries are positive and significant at the 0.01% level while the estimated error-correction terms are all negative (as should be expected) and also significant at the 0.01% level (see Table 1).

Table 1 / The 10 cases of non-rejected co-integration between $\log(Y)$ and $\log(Y^*)$

	Observations included	F-statistics	t-statistics	EC term	c_3
Argentina	45	4.83**	-3.000*	-0.3239	0.6299
Colombia	49	4.28*	-3.494**	-0.255	1.1986
Finland	51	5.94**	-2.950*	-0.2179	0.9513
Indonesia	51	10.5***	-3.470**	-0.1305	1.825
Israel	51	10.50***	-3.110*	-0.240	1.4486
Kenya	52	23.9***	-2.990**	-0.1655	1.283
Malaysia	51	4.3**	-3.190**	-0.1945	2.048
Tunisia	51	8.715***	-3.240**	-0.2596	1.406
Uganda	29	11.44***	-4.490***	-0.2245	2.423
Venezuela	51	6.36**	-3.075**	-0.241	0.6739

F-statistic values for testing H_0 : 'no long-term relationship exists'. *** implies rejection of H_0 at 1% significance; **: rejection at 5%; *: rejection at 10%. The critical bounds for the F-statistics are taken from Narayan (2004), Appendix Tables A1-A3. t-statistics values for testing the same hypothesis: *** implies rejection of H_0 at 1% significance; ** at 5%, * at 10%. The critical bounds for t-statistics are taken from Pesaran et al. (2001), Table CII(iii).

According to the ARDL analysis, allowing for $\log(\Pi)$ as an additional explanatory variable, the F-statistics rejects the null of non-existence of long-term relationship in 31 cases. However, most of these cases are highly problematic anyway. In two cases the estimated EC term is positive and in 12 cases it is negative but very close to zero. In 8 cases the estimated c_3 is negative (though generally insignificant). The estimated c_2 has the 'wrong' (i.e. positive) sign in 19 cases. Finally, only 4 countries pass the second 'bounds' testing statistics (see Table 2). The estimates for c_2 are all 'wrongly signed' (in violation of the Marshall-Lerner condition) but – in two cases – statistically insignificant (see the last column in Table 2).

⁴ Similarly, the customary stability tests (such as CUSUM) do not suggest instability of the estimated parameters.

The estimated EC terms and c_3 parameters for these cases are correctly signed and significant at the 0.01% level. (However, the estimated EC term for Namibia is greater than 1 in absolute terms. This suggests instability of the ARDL model for that country.)

Table 2 / The 4 cases of non-rejected co-integration between $\log(Y)$, $\log(Y^*)$ and $\log(\Pi)$

	Observations included	F-statistics	t-statistics	EC term	C_3	C_2	Prob.
Ecuador	49	4.13*	-4.02***	-0.267	1.082	0.0855	0.247
Namibia	29	7.07***	-4.58***	-1.014	1.433	0.2976	0.000
Tunisia	51	7.73***	-3.27*	-0.282	1.55	0.3605	0.0501
Venezuela	51	5.25**	-3.22*	-0.285	0.670	0.0361	0.6115

F-statistic values for testing H_0 : 'no long-term relationship exists'. *** implies rejection of H_0 at 1% significance; **: rejection at 5%; *: rejection at 10%. The critical bounds for the F-statistics are taken from Narayan (2004), Appendix Tables A1-A3. t-statistics values for testing the same hypothesis: *** implies rejection of H_0 at 1% significance; ** at 5%, * at 10%. The critical bounds for t-statistics are taken from Pesaran et al. (2001), Table CII(iii).

The findings reported in Tables 1-2 provide some support to Thirlwall's original idea that corrections of trade imbalances primarily involve quantity (GDP) and not the relative price (i.e. exchange rate) adjustments. In the cases reported in Table 1, co-integration obtains with the exchange rate variable being ignored. When that variable is taken into consideration (Table 2) it proves to be 'wrongly' signed. In any case the elimination of trade imbalances in the cases from Tables 1-2 cannot be expected to proceed through exchange rate adjustments. However, our estimates do not allow any judgement on the relative roles of the quantity and price adjustments for the remaining countries.

CONCLUDING REMARKS

An earlier analysis applying the Dynamic Ordinary Least Squares approach to the model given by (9) (Podkaminer, 2015) suggested that Thirlwall's Law did not hold for a decisive majority of countries considered. The same conclusion follows the analysis using the ARDL Bounds approach. The latter approach appears slightly more 'liberal' than DOLS. This may have something to do with the fact that the critical values for the upper bounds of the t-statistics (taken from Pesaran et al., 2001) are asymptotic – while the series considered are not very long. The exact critical bounds values for the t-statistic for the time series considered may have been more restrictive.⁵

The unimportance of the real exchange rate as a factor co-determining long-term growth, revealed earlier, has now been confirmed. Evidence is strong that the Marshall-Lerner condition does not hold, at least in the longer-run perspective. Of course this is not quite a novel finding as many authors have also found violation of the Marshall-Lerner condition in studies concerned with the estimation of trade elasticities (e.g. Imbs and Mejean, 2010; Crane et al., 2007; Wu, 2011).

Imperfect data may have been one reason for the generally negative verdict on the empirical validity of Thirlwall's Law. The 'fault' may also lie with the functional form of the underlying equations (1)-(2). Some parsimonious modifications of the functional form of equations (1)-(2) may perhaps need to be

⁵ The critical values for the F-statistics bounds, taken from Narayan (2004), are 'exact' – they allow for time series of finite lengths (in the 30-80 range). For the time series' lengths considered here Narayan's upper bounds for the F-statistics are generally much higher (more restrictive) than the respective asymptotic values reported in Pesaran et al. (2001).

developed. With such modifications the Law may 'fit the data' satisfactorily without losing the power to provide simple insights into the role external imbalances play in determining long-term growth of small open economies. In any case, it is vital that the eventual testing applies to models that are capable of reflecting sufficient (and not merely necessary) conditions for long-term balanced growth.⁶

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⁶ Recent contributions (such as Tharnpanich and McCombie, 2013; Ibara and Blecker, 2016; Razmi, 2015, among others) introduce variously defined structural changes (and 'structural breaks') into Thirlwall's original framework. One trouble with these innovations is that they introduce additions making the basic insight of Thirlwall's Law no more appealingly transparent. Besides, the innovations rendering the elasticity parameters dependent on exogenous developments (e.g. the supply-side ones, or relating to the advances in globalisation) implicitly reject the underlying model (1-2) which assumes *constant* parameters. Moreover, the recent contributions go on with the direct – necessarily problematic – estimation of the elasticity parameters for the export and import functions. Last, but not least, the estimates they provide are derived from formulae reflecting necessary – but not necessarily sufficient – conditions for long-term balanced growth.

Property claims: Kosovo versus Serbia

BY PËLLUMB ÇOLLAKU¹

INTRODUCTION

The property dispute between the Republic of Serbia (RS) and the Republic of Kosovo (RKS) has recently flared up again following a decision of Kosovo's government to appropriate all real estate properties that were registered under the name of the former Socialist Federal Republic of Yugoslavia (SFRY), the Republic of Serbia or the former Socialist Autonomous Province of Kosovo (SAPK). The decree covers the immovable property of the former central state, the military, and social-political organisations. It obliges the Kosovo Cadastral Agency, as the central authority for the property registers, to proceed with the registration of property rights concerning all above-mentioned properties.

Kosovo officials claim that the decree is based on the RKS's Constitution, the Declaration of Independence and the International Law Convention on the Succession of state property. The government officials believe that this decision will facilitate the work of many of the municipalities and institutions which own or use such property.

The decision triggered indignation on the part of the official Belgrade and the political representatives of Kosovo Serbs in Kosovo, who requested the withdrawal of the decision. In addition, Serbian Deputy Prime Minister Ivica Dačić declared the decision to be unacceptable and unlawful. Also Marko Đurić, Chief of Office for Kosovo in the Serbian government, asked the representatives of the Kosovo municipalities with majority Serbian population and political representatives of Serbs in Kosovo to call for the withdrawal of the decision.

The reaction of Serbia is understandable and based on the fact that Serbia still has not recognised the independence of the Republic of Kosovo. Serbian authorities claim that with this decision Kosovo wants to deprive the Serbian population living in Kosovo of its property.

HISTORICAL ROOTS OF THE PROBLEM

The state of the Socialist Federal Republic of Yugoslavia (SFRY), established in 1946, consisted of six federative republics: Bosnia and Herzegovina, Croatia, Macedonia, Montenegro, Serbia and Slovenia, and two socialist autonomous provinces, Kosovo and Vojvodina. Kosovo's property disputes are mostly characterised by unusual features as compared to other SFRY constituents because it was one of only two autonomous provinces in the SFRY, and after Serbia gaining independence. The situation is a product of Kosovo's ambiguous legal personality within former Yugoslavia, subjugation under the

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Milošević regime and the period under international protectorate, i.e. the United Nations Interim Administration Mission in Kosovo (UNMIK).

According to Perrit (2004), it is this ambiguity that led to disputes originating in the Yugoslav experience itself. This means that (i) the expropriation of some of the private property which took place mainly after the Second World War might be the origin of the whole problem; (ii) much of that property was kept as social ownership in socially owned enterprises (SOEs); and (iii) assets owned later by the Yugoslav state and its enterprises were usually subject to various trading embargoes and freezes imposed by the United States and other countries, most likely due to the wars in Croatia, Bosnia and Herzegovina, and Kosovo.²

Concerning (ii), the so-called socialist (workers') self-management emerged as in 1950 and 1951 the first workers' councils were formed by the then state-owned companies, by legislative act. With these laws state ownership of the means of production legally became 'social property' (*drustveno vlasnistvo*) entrusted to the management of workers in enterprises (see Flaherty, 2003). This social ownership presented a number of problems because of the ownership ambiguity of SOEs (see Perrit, 2004). This set of legal relationships was complicated further by the Milošević regime, during which a 'transformation' or privatisation of a high number of SOEs took place.

The Kosovo case is more complicated compared to other constituent units of former Yugoslavia because it was not a republic within the federation and its case was not addressed by the Yugoslav Agreement on Succession Issues. This means that Kosovo was not dissolved from SFRY like other socialist republics and was not treated according to the dissolution principle by SFRY. It was treated according to a 'continuation principle' because it was an autonomous province of Serbia, so the succession procedure and dissolution should have been concluded with Serbia. Hence, the clash between the two governments is a consequence of the unclear social property issues. Serbia claims that the social property in Kosovo is inherited from former Yugoslavia, and while Serbia was one of the constituent units of the federation and Kosovo its autonomous province, there is a tendency to presume that part of the property is also Serbian. This implies that the process should be finalised with Serbia which, however, does not recognise Kosovo as an independent state.

Since the end of the Kosovo war in 1999, the property dispute has been the origin of many collisions between the governments of Kosovo and Serbia. While Belgrade insists that the resolution of these disputes are to be discussed in Kosovo-Serbia talks aiming at the normalisation of bilateral relations, that request was being rejected continuously by the authorities in Prishtina, who claim that after Kosovo's Declaration of Independence, all property in Kosovo belongs to the Republic of Kosovo.

TWO LARGE ENTERPRISES AT THE CENTRE OF THE PROPERTY DISPUTE

The property dispute has been posing serious obstacles to the privatisation process and investment inflows in Kosovo. The Trepça mines near Mitrovica and the Brezovica Ski Resort are major enterprises which are affected by the nationalisation decision and the main reason why the Serbian side immediately rejected it (see Vukojcic, 2017). In the past, there had already been several fervent discussions between Serbia and Kosovo regarding these properties.

² <http://law.justia.com/cases/federal/district-courts/FSupp2/33/644/2519005/>

In October 2016, when Kosovo's parliament passed a bill by which the Republic of Kosovo took control over the Trepça mines, Serbia categorically opposed that law. Since then, the Serbian political representatives in Kosovo institutions have decided to suspend their functions in Kosovo's government and parliament.

The Kosovo government also proceeded with the privatisation of the Brezovica Ski Resort to a French consortium, with the aim to develop the resort and increase tourism in that region. The privatisation project later failed because the French consortium did not meet the financial requirements prescribed in the contract.

ECONOMIC EFFECTS OF PROPERTY NATIONALISATION

Considering that the ex-social property of former Yugoslavia to be nationalised includes major enterprises, the decision will naturally have economic effects on Kosovo. Whether Serbia decides to solve the dispute in international tribunals or through bilateral discussions still remains unknown. However, until then, the revitalisation of the Trepça enterprise is highly urgent for the Kosovo's economy. Regardless of whether it is done by the government, public-private partnership or foreign investor, it would be a tremendous boost to the economy. Reactivation of the mines would put the economy onto a more stable growth path. This will enhance economic growth, increase employment, boost exports and improve the current account.

The Brezovica Ski Resort could also be an important source of new jobs that would add to the local population's well-being and increase the region's competitiveness. The performance of both enterprises is crucial to the population of the surrounding areas and important to Kosovo as a whole.

Thus, on the one hand, these two enterprises are vital to Kosovo's economy while, on the other, Serbia cannot accept the decision to nationalise as the Serbian government does not recognise Kosovo as an independent state. At the moment, it seems that international disputes are unavoidable. If one of the parties decides to turn to the international tribunals to resolve the issue, this will not only put a burden on Kosovo taxpayers but will also have other negative repercussions such as lowering the country's attractiveness for foreign investors.

POLICY RECOMMENDATIONS

I am a proponent of the idea of Perrit (2004) that the best way to resolve the dispute would be via a mediation process. One solution might be that Kosovo should accept responsibility for its portion of the Yugoslav and Serbian debt of socially owned enterprises – more specifically, debt which is directly associated with projects and other benefits in the territory of Kosovo.

Moreover, as Perrit (2004) suggests, 22 March 1989 would be a good referral point for determining debt and asset values to be apportioned to the states of Serbia and Kosovo. This would help to calculate the damage of assets by the Milošević regime and the war. In this case, Kosovo should be entitled to the same percentage of Yugoslav assets as the percentage of Yugoslav debt apportioned to it. However, so far this remains only one of the solutions that the parties might agree on in order to prevent a judicial battle in international tribunals.

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The editors recommend for further reading*

Miscellaneous

Resources, trade, and wars: <http://voxeu.org/article/growth-import-dependence-and-war>

Piketty's 'Capital in the twenty-first century' and class struggle: <https://www.jacobinmag.com/2017/05/after-piketty-capital-twenty-first-century-naidu>

On the idea of basic income:

<http://bostonreview.net/forum/brishen-rogers-basic-income-just-society>

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On new Egypt: <http://www.nybooks.com/articles/2017/06/08/egypt-the-new-dictatorship/>

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On identities and attitudes on both sides of the conflict line in Donbas:

<http://carnegieeurope.eu/strategieurope/?fa=69979>

* Recommendation is not necessarily endorsement. The editors are grateful to Vladimir Gligorov and Mario Holzner for valuable contributions to this section.

Monthly and quarterly statistics for Central, East and Southeast Europe

The monthly and quarterly statistics cover **20 countries** of the CESEE region. The graphical form of presenting statistical data is intended to facilitate the **analysis of short-term macroeconomic developments**. The set of indicators captures tendencies in the real sector, pictures the situation in the labour market and inflation, reflects fiscal and monetary policy changes, and depicts external sector development.

Baseline data and a variety of other monthly and quarterly statistics, **country-specific** definitions of indicators and **methodological information** on particular time series are **available in the wiiw Monthly Database** under: <https://data.wiiw.ac.at/monthly-database.html>. Users regularly interested in a certain set of indicators may create a personalised query which can then be quickly downloaded for updates each month.

Conventional signs and abbreviations used

%	per cent
GDP	Gross Domestic Product
LFS	Labour Force Survey
HICP	Harmonized Index of Consumer Prices (for new EU Member States)
PPI	Producer Price Index
M1	Currency outside banks + demand deposits / narrow money (ECB definition)
M2	M1 + quasi-money / intermediate money (ECB definition)
p.a.	per annum
mn	million (10^6)
bn	billion (10^9)

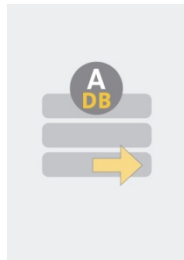
The following national currencies are used:

ALL	Albanian lek	HUF	Hungarian forint	RSD	Serbian dinar
BAM	Bosnian convertible mark	KZT	Kazakh tenge	RUB	Russian rouble
BGN	Bulgarian lev	MKD	Macedonian denar	TRY	Turkish lira
CZK	Czech koruna	PLN	Polish zloty	UAH	Ukrainian hryvnia
HRK	Croatian kuna	RON	Romanian leu		

EUR euro – national currency for Montenegro and for the euro-area countries Estonia (from January 2011, euro-fixed before), Latvia (from January 2014, euro-fixed before), Lithuania (from January 2015, euro-fixed before), Slovakia (from January 2009, euro-fixed before) and Slovenia (from January 2007, euro-fixed before).

Sources of statistical data: Eurostat, National Statistical Offices, Central Banks and Public Employment Services; wiiw estimates.

Online database access



wiiw Annual Database



wiiw Monthly Database



wiiw FDI Database

The wiiw databases are accessible via a simple web interface, with only one password needed to access all databases (and all wiiw publications).

You may access the databases here: <https://data.wiiw.ac.at>.

If you have not yet registered, you can do so here: <https://wiiw.ac.at/register.html>.

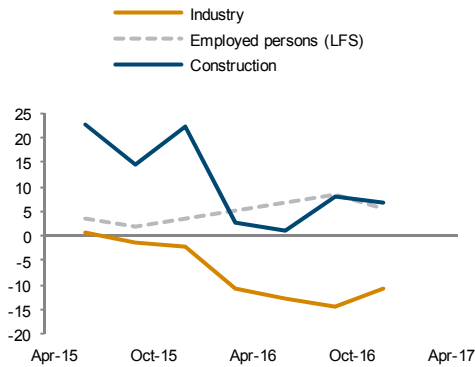
Service package available

We offer an additional service package that allows you to access all databases – a Premium Membership, at a price of € 2,300 (instead of € 2,000 as for the Basic Membership). Your usual package will, of course, remain available as well.

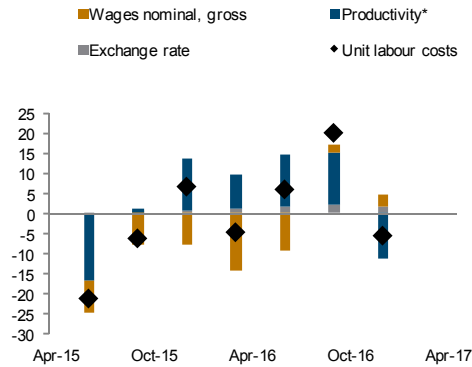
For more information on database access for Members and on Membership conditions, please contact Ms. Gabriele Stanek (stanek@wiiw.ac.at), phone: (+43-1) 533 66 10-10.

Albania

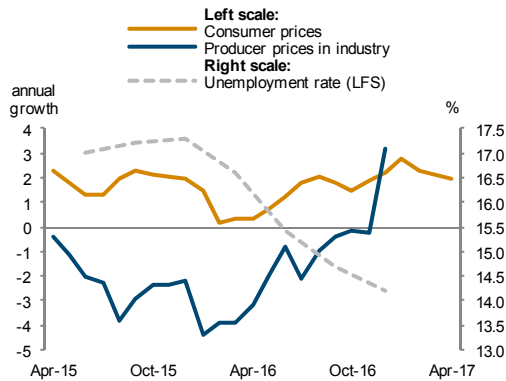
Real sector development
annual growth rate in %



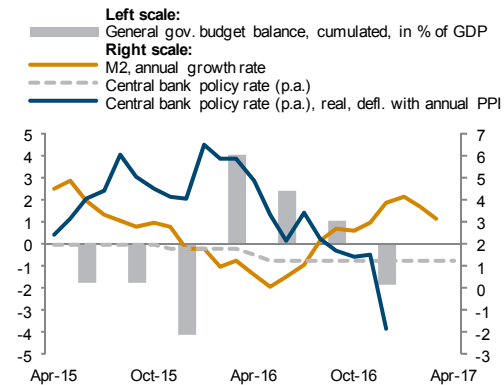
Unit labour costs in industry
annual growth rate in %



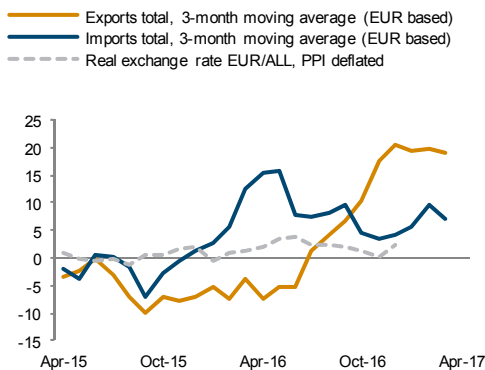
Inflation and unemployment
in %



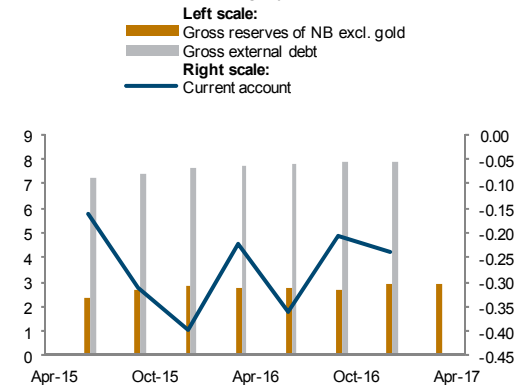
Fiscal and monetary policy
in %



External sector development
annual growth rate in %



External finance
EUR bn



*Positive values of the productivity component on the graph reflect decline in productivity and vice versa.

Source: wiiw Monthly Database incorporating Eurostat and national statistics.

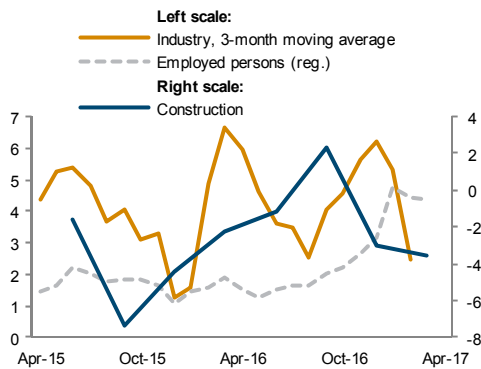
Baseline data, country-specific definitions and methodological breaks in time series are available under:

<https://data.wiiw.ac.at/monthly-database.html>

Bosnia and Herzegovina

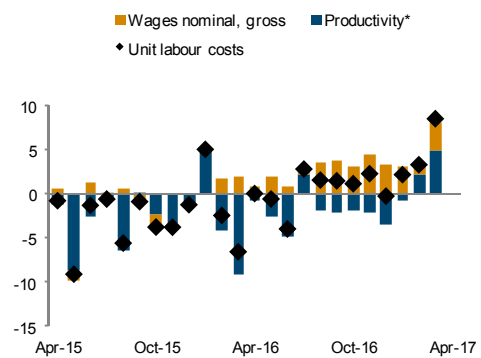
Real sector development

annual growth rate in %



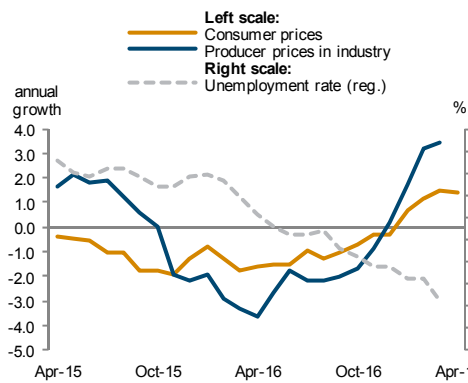
Unit labour costs in industry

annual growth rate in %



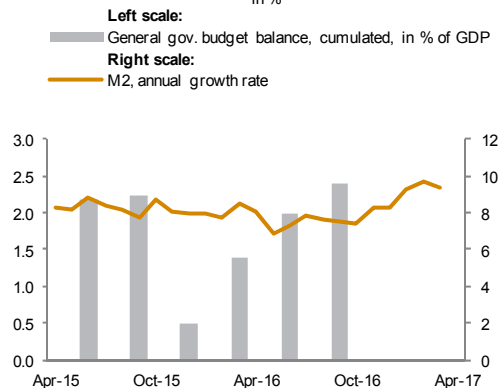
Inflation and unemployment

in %



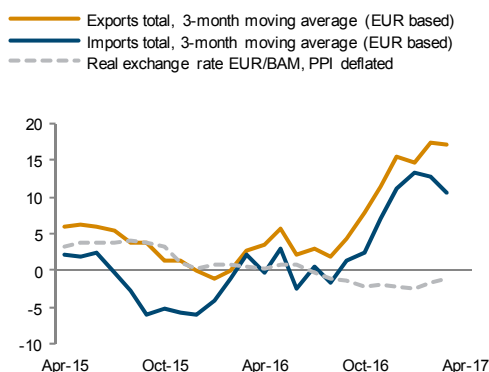
Fiscal and monetary policy

in %



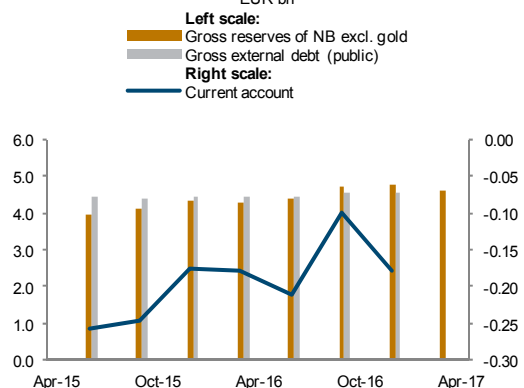
External sector development

annual growth rate in %



External finance

EUR bn



*Positive values of the productivity component on the graph reflect decline in productivity and vice versa.

Source: wiiw Monthly Database incorporating Eurostat and national statistics.

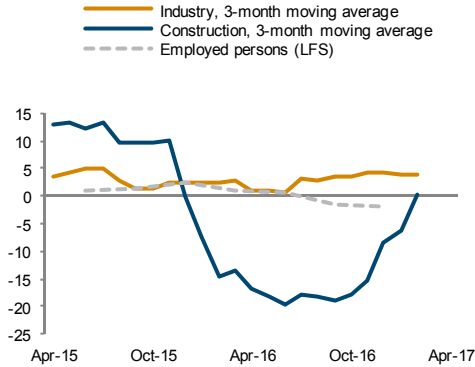
Baseline data, country-specific definitions and methodological breaks in time series are available under:

<https://data.wiiw.ac.at/monthly-database.html>

Bulgaria

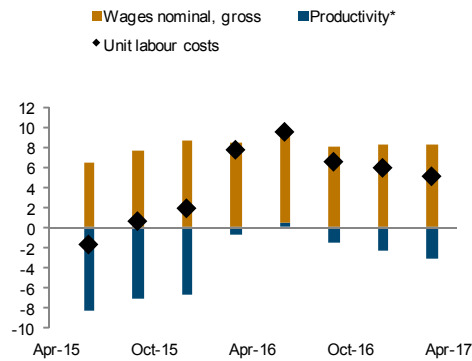
Real sector development

annual growth rate in %



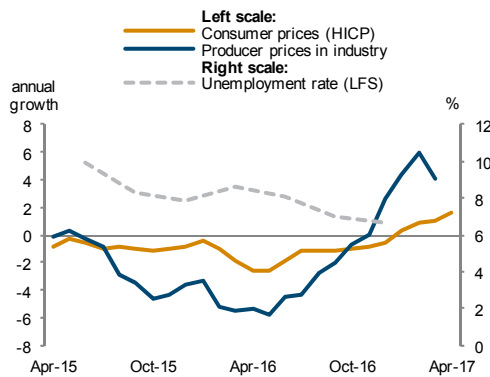
Unit labour costs in industry

annual growth rate in %



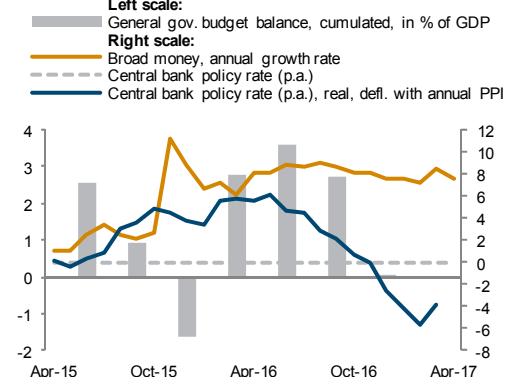
Inflation and unemployment

in %



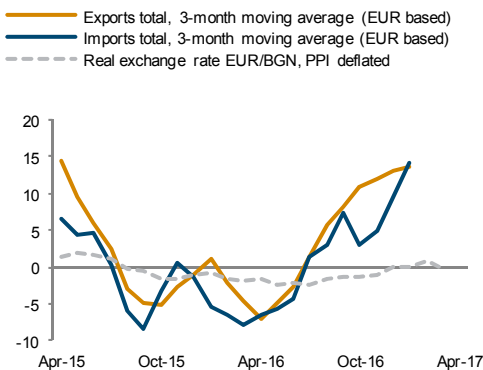
Fiscal and monetary policy

in %



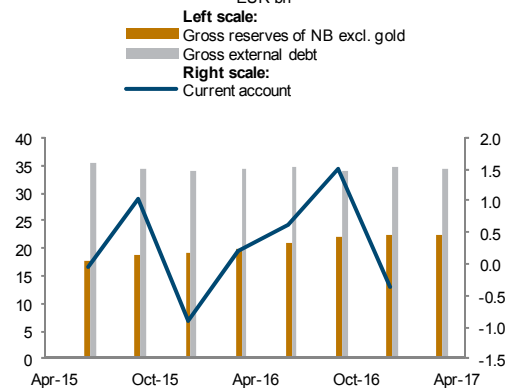
External sector development

annual growth rate in %



External finance

EUR bn



*Positive values of the productivity component on the graph reflect decline in productivity and vice versa.

Source: wiiw Monthly Database incorporating Eurostat and national statistics.

Baseline data, country-specific definitions and methodological breaks in time series are available under:

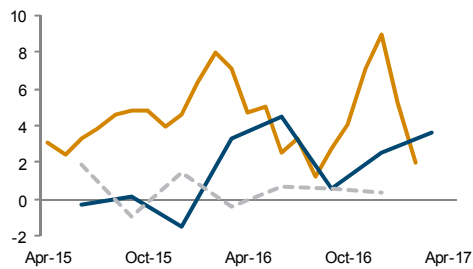
<https://data.wiiw.ac.at/monthly-database.html>

Croatia

Real sector development

annual growth rate in %

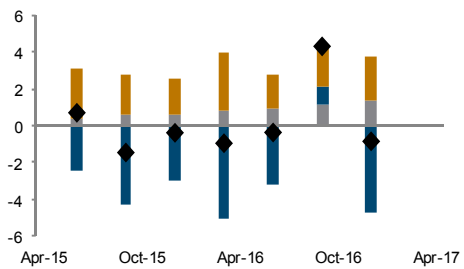
— Industry, 3-month moving average
— Construction, 3-month moving average
- - - Employed persons (LFS)



Unit labour costs in industry

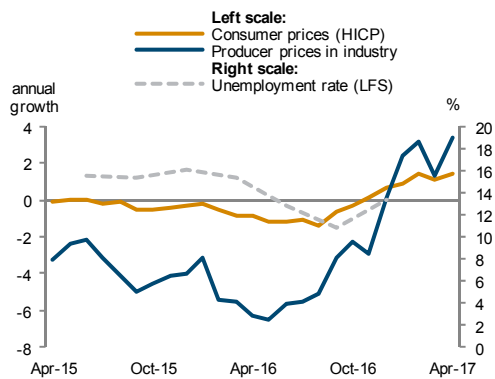
annual growth rate in %

■ Wages nominal, gross ■ Productivity*
■ Exchange rate ◆ Unit labour costs



Inflation and unemployment

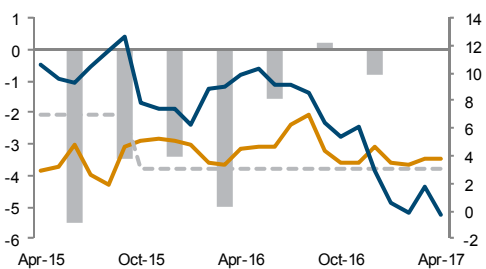
in %



Fiscal and monetary policy

in %

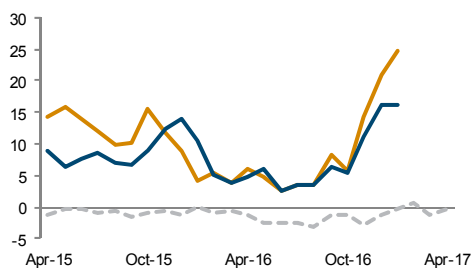
■ Left scale: General gov. budget balance, cumulated, in % of GDP
■ Right scale: Broad money, annual growth rate
- - - Central bank policy rate (p.a.)
— Central bank policy rate (p.a.), real, defl. with annual CPI



External sector development

annual growth rate in %

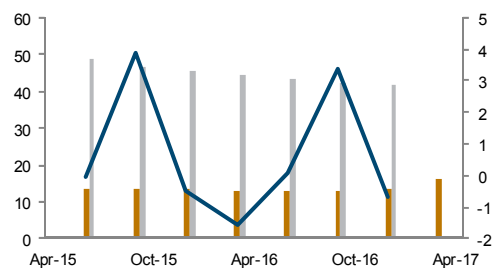
— Exports total, 3-month moving average (EUR based)
— Imports total, 3-month moving average (EUR based)
- - - Real exchange rate EUR/HRK, PPI deflated



External finance

EUR bn

■ Left scale: Gross reserves of NB excl. gold
■ Gross external debt
■ Right scale: Current account



*Positive values of the productivity component on the graph reflect decline in productivity and vice versa.

Source: wiiw Monthly Database incorporating Eurostat and national statistics.

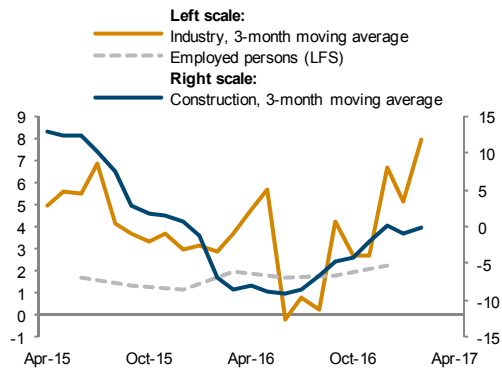
Baseline data, country-specific definitions and methodological breaks in time series are available under:

<https://data.wiiw.ac.at/monthly-database.html>

Czech Republic

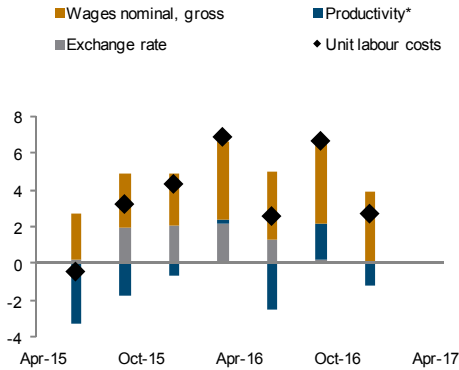
Real sector development

annual growth rate in %



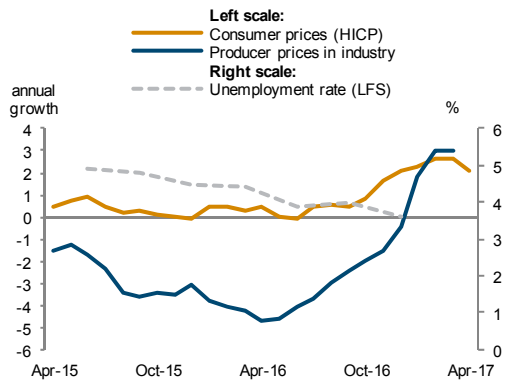
Unit labour costs in industry

annual growth rate in %



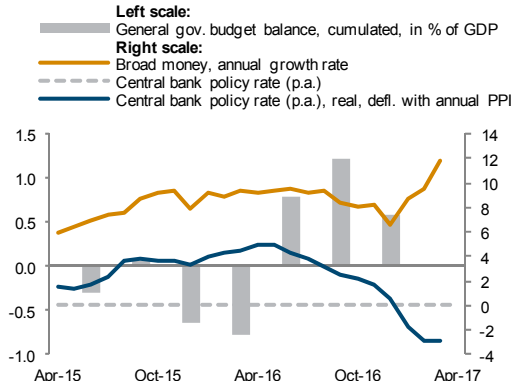
Inflation and unemployment

in %



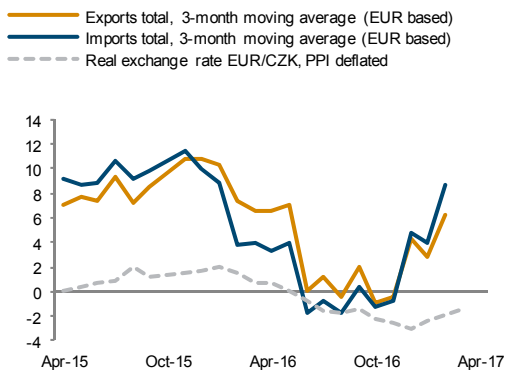
Fiscal and monetary policy

in %



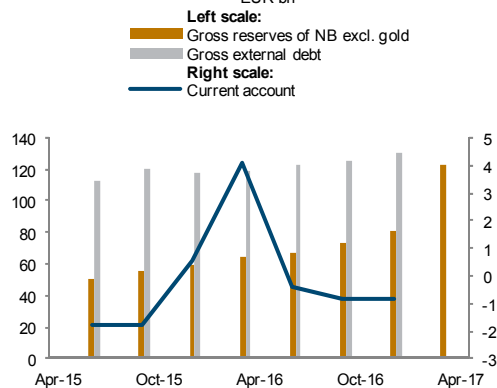
External sector development

annual growth rate in %



External finance

EUR bn



*Positive values of the productivity component on the graph reflect decline in productivity and vice versa.

Source: wiiw Monthly Database incorporating Eurostat and national statistics.

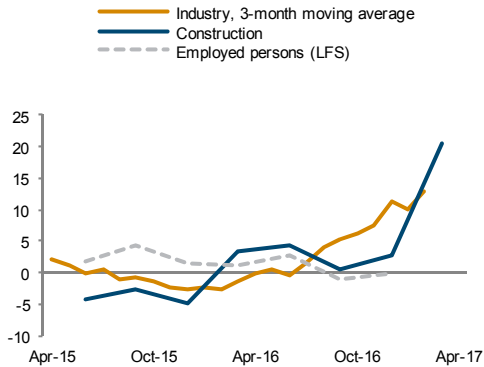
Baseline data, country-specific definitions and methodological breaks in time series are available under:

<https://data.wiiw.ac.at/monthly-database.html>

Estonia

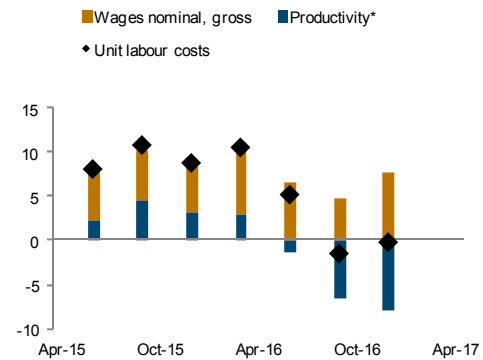
Real sector development

annual growth rate in %



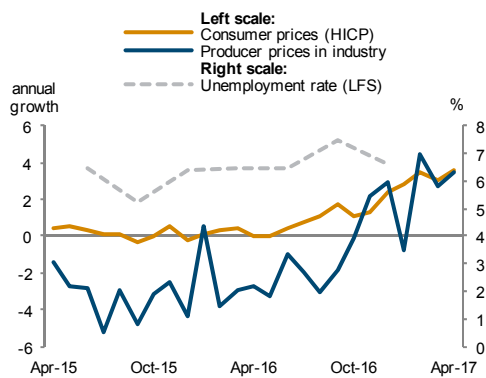
Unit labour costs in industry

annual growth rate in %



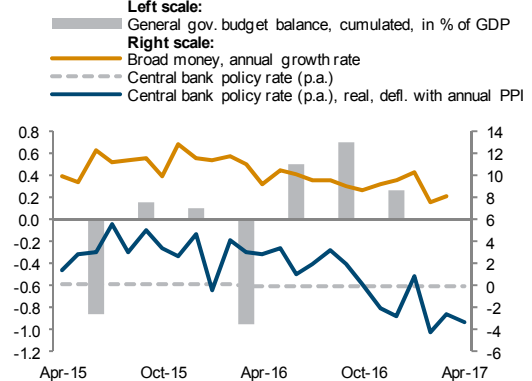
Inflation and unemployment

in %



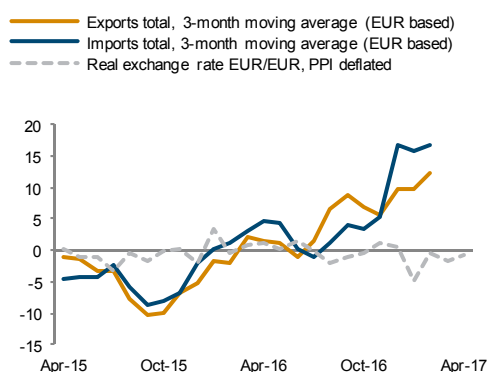
Fiscal and monetary policy

in %



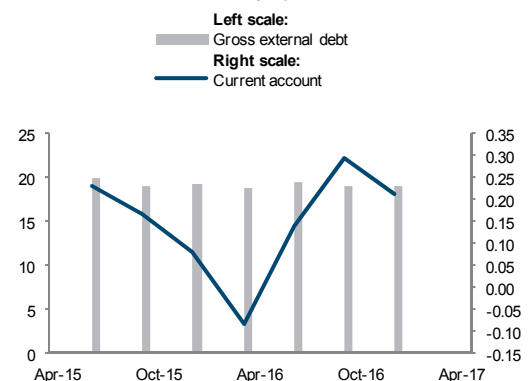
External sector development

annual growth rate in %



External finance

EUR bn



*Positive values of the productivity component on the graph reflect decline in productivity and vice versa.

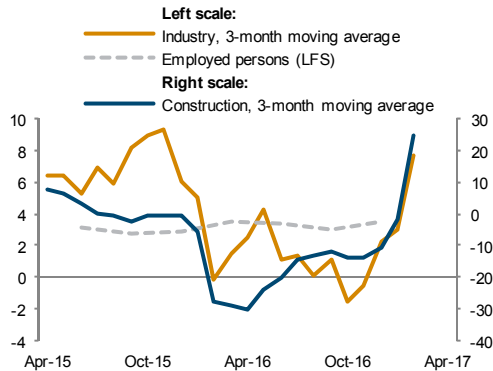
Source: wiiw Monthly Database incorporating Eurostat and national statistics.

Baseline data, country-specific definitions and methodological breaks in time series are available under:

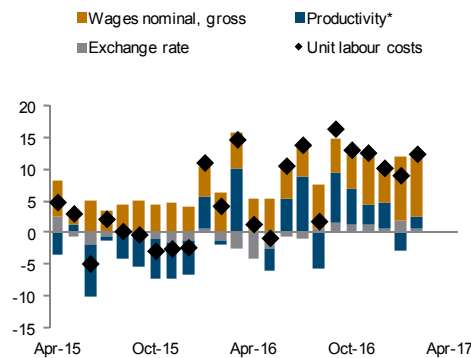
<https://data.wiiw.ac.at/monthly-database.html>

Hungary

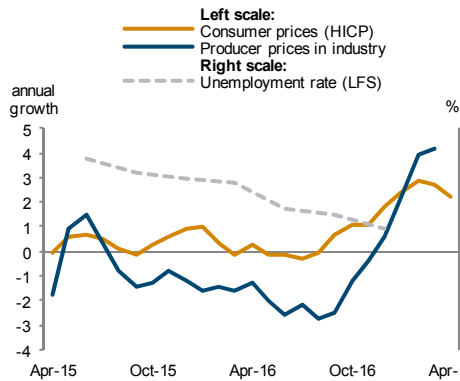
Real sector development
annual growth rate in %



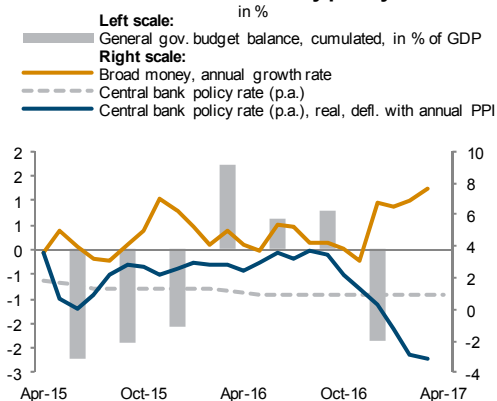
Unit labour costs in industry
annual growth rate in %



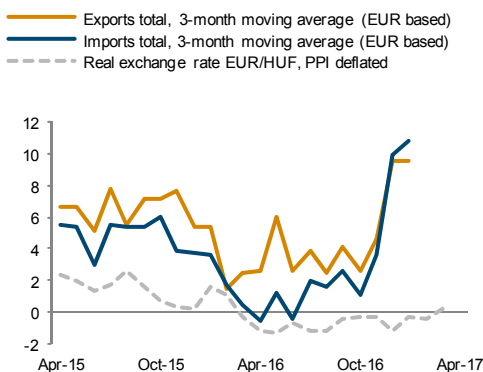
Inflation and unemployment
in %



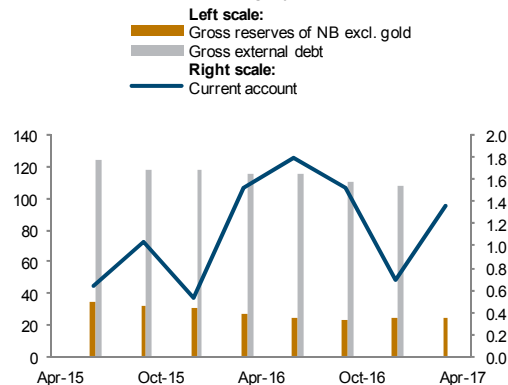
Fiscal and monetary policy
in %



External sector development
annual growth rate in %



External finance
EUR bn



*Positive values of the productivity component on the graph reflect decline in productivity and vice versa.

Source: wiiw Monthly Database incorporating Eurostat and national statistics.

Baseline data, country-specific definitions and methodological breaks in time series are available under:

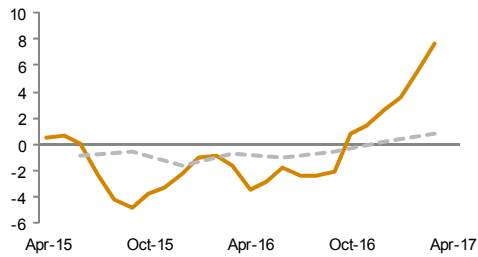
<https://data.wiiw.ac.at/monthly-database.html>

Kazakhstan

Real sector development

annual growth rate in %

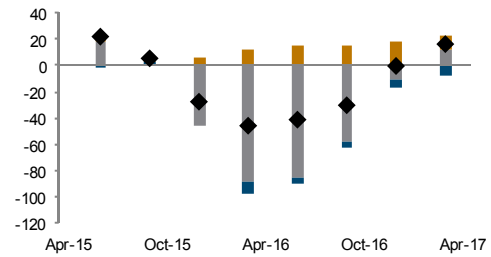
- Industry, 3-month moving average
- Employed persons (LFS)



Unit labour costs in industry

annual growth rate in %

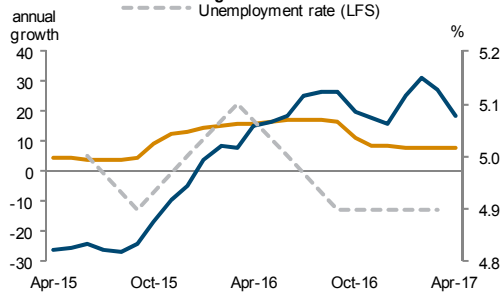
- Wages nominal, gross
- Exchange rate
- Productivity*
- Unit labour costs



Inflation and unemployment

in %

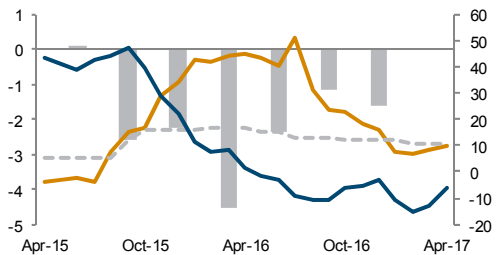
- Left scale:**
 - Consumer prices
 - Producer prices in industry
- Right scale:**
 - Unemployment rate (LFS)



Fiscal and monetary policy

in %

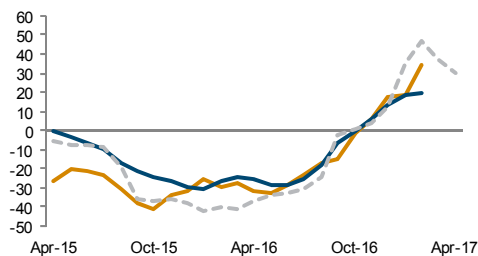
- Left scale:**
 - General gov. budget balance, cumulated, in % of GDP
- Right scale:**
 - Broad money, annual growth rate
 - Central bank policy rate (p.a.)
 - Central bank policy rate (p.a.), real, defl. with annual PPI



External sector development

annual growth rate in %

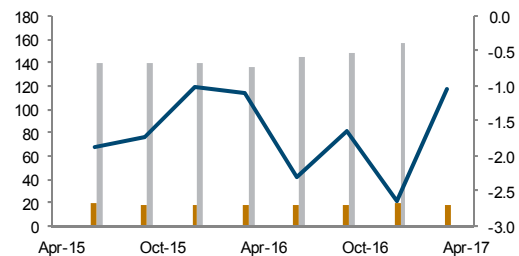
- Exports total, 3-month moving average (EUR based)
- Imports total, 3-month moving average (EUR based)
- Real exchange rate EUR/KZT, PPI deflated



External finance

EUR bn

- Left scale:**
 - Gross reserves of NB excl. gold
 - Gross external debt
- Right scale:**
 - Current account



*Positive values of the productivity component on the graph reflect decline in productivity and vice versa.

Source: wiiw Monthly Database incorporating Eurostat and national statistics.

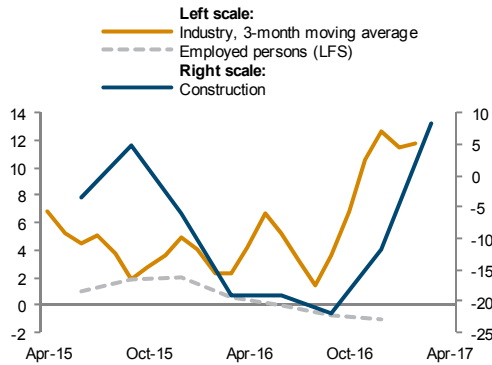
Baseline data, country-specific definitions and methodological breaks in time series are available under:

<https://data.wiiw.ac.at/monthly-database.html>

Latvia

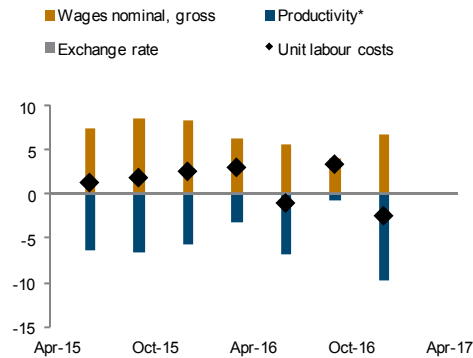
Real sector development

annual growth rate in %



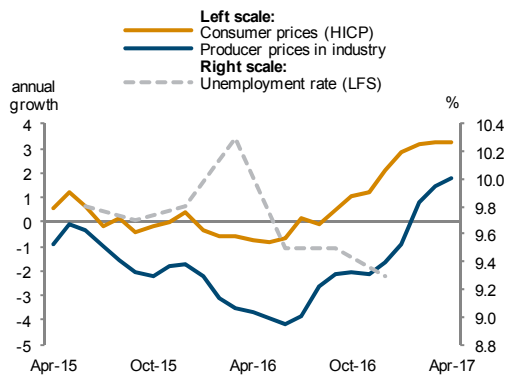
Unit labour costs in industry

annual growth rate in %



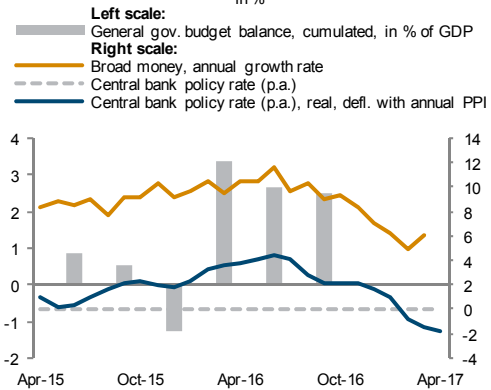
Inflation and unemployment

in %



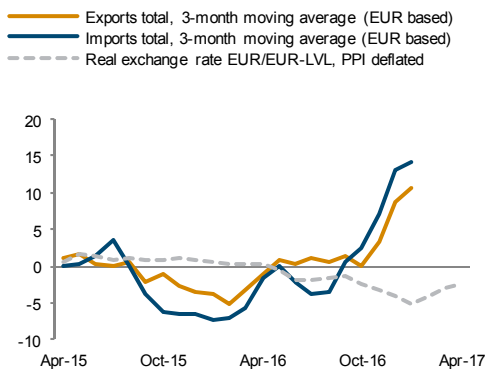
Fiscal and monetary policy

in %



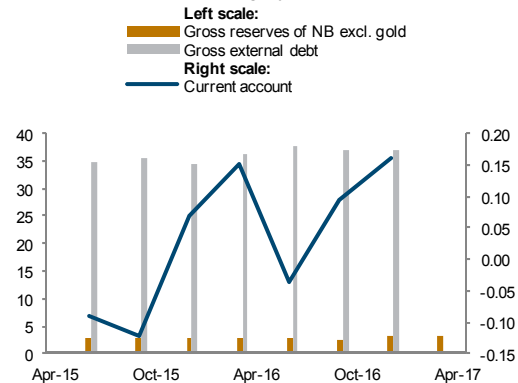
External sector development

annual growth rate in %



External finance

EUR bn



*Positive values of the productivity component on the graph reflect decline in productivity and vice versa.

Source: wiiw Monthly Database incorporating Eurostat and national statistics.

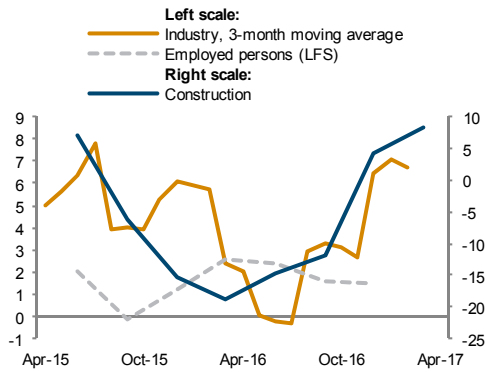
Baseline data, country-specific definitions and methodological breaks in time series are available under:

<https://data.wiiw.ac.at/monthly-database.html>

Lithuania

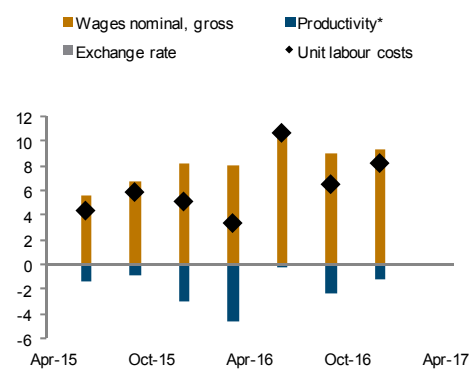
Real sector development

annual growth rate in %



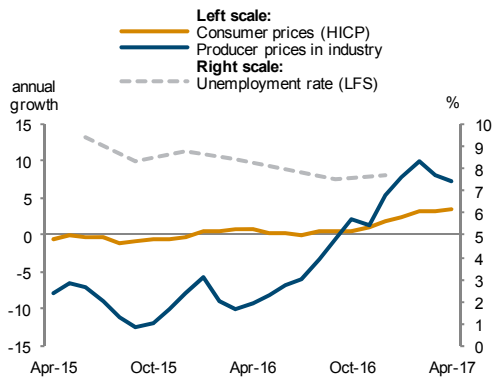
Unit labour costs in industry

annual growth rate in %



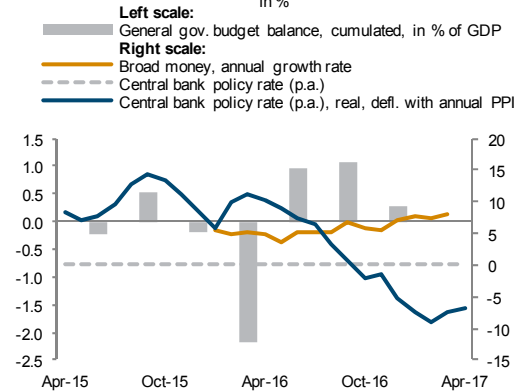
Inflation and unemployment

in %



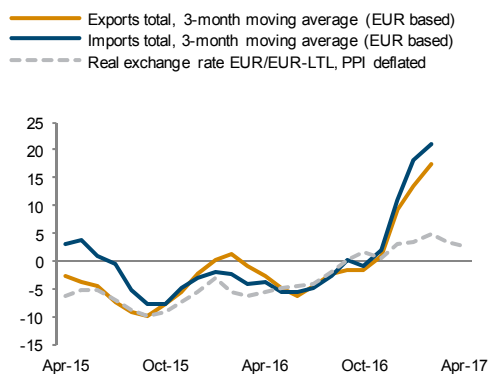
Fiscal and monetary policy

in %



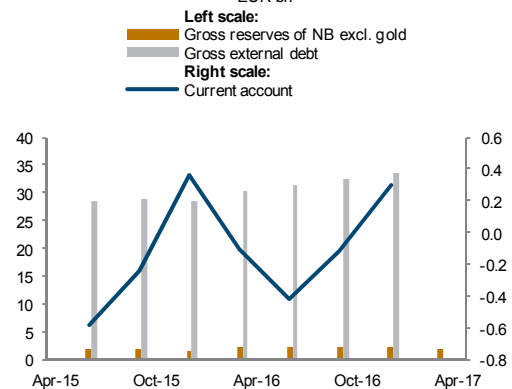
External sector development

annual growth rate in %



External finance

EUR bn



*Positive values of the productivity component on the graph reflect decline in productivity and vice versa.

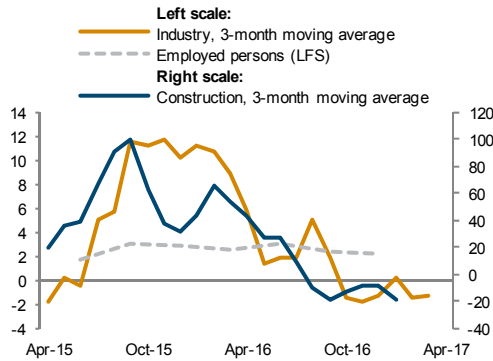
Source: wiiw Monthly Database incorporating Eurostat and national statistics.

Baseline data, country-specific definitions and methodological breaks in time series are available under:

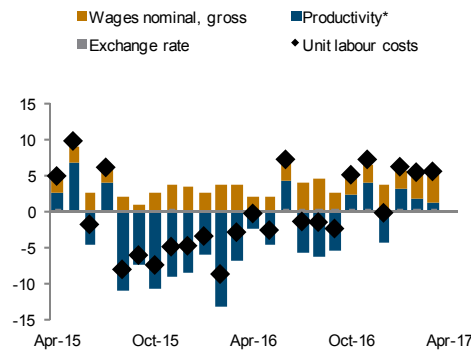
<https://data.wiiw.ac.at/monthly-database.html>

Macedonia

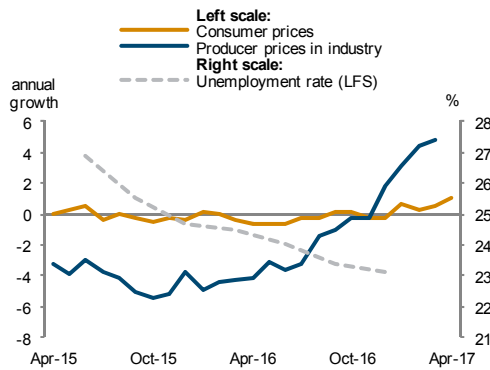
Real sector development
annual growth rate in %



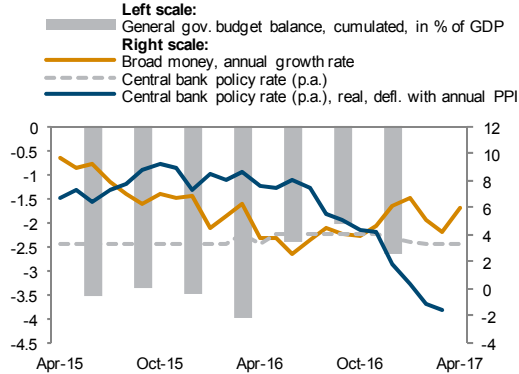
Unit labour costs in industry
annual growth rate in %



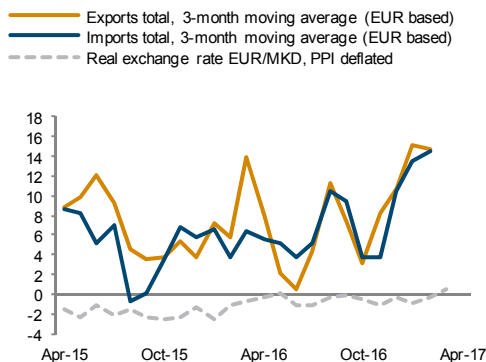
Inflation and unemployment
in %



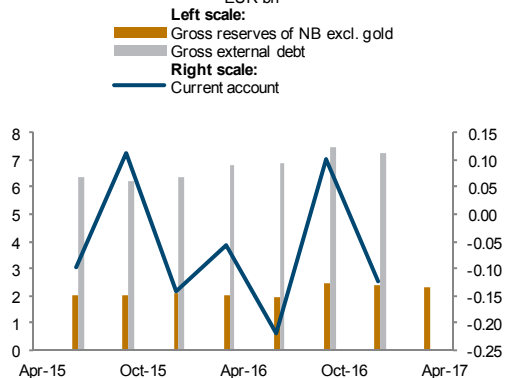
Fiscal and monetary policy
in %



External sector development
annual growth rate in %



External finance
EUR bn



*Positive values of the productivity component on the graph reflect decline in productivity and vice versa.

Source: wiiw Monthly Database incorporating Eurostat and national statistics.

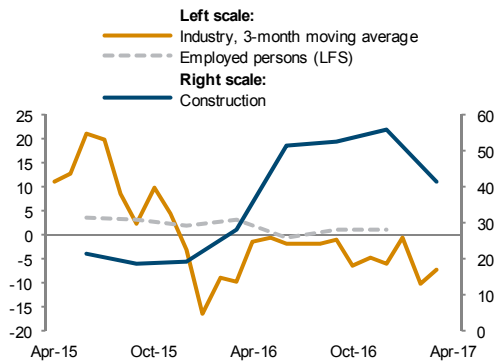
Baseline data, country-specific definitions and methodological breaks in time series are available under:

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Montenegro

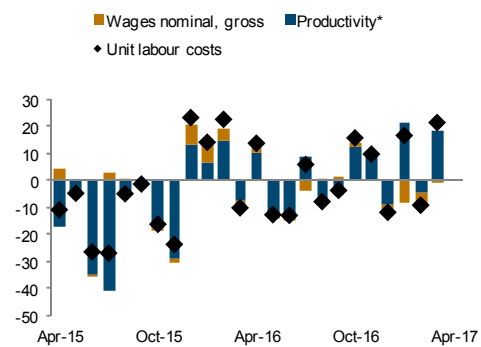
Real sector development

annual growth rate in %



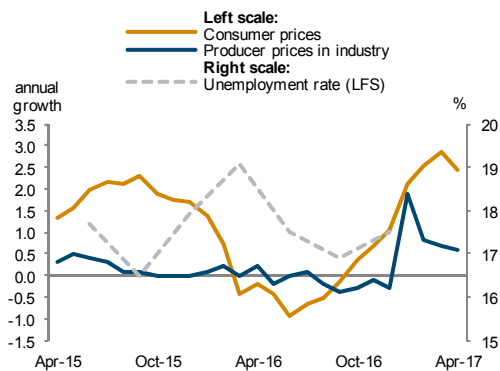
Unit labour costs in industry

annual growth rate in %



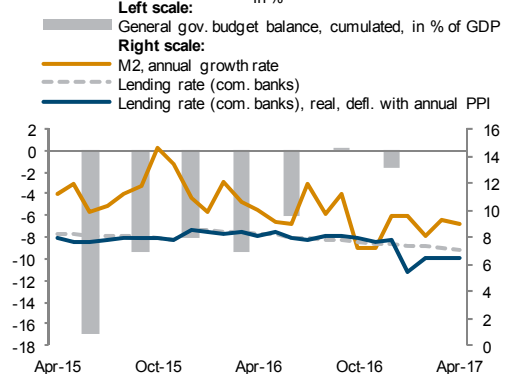
Inflation and unemployment

in %



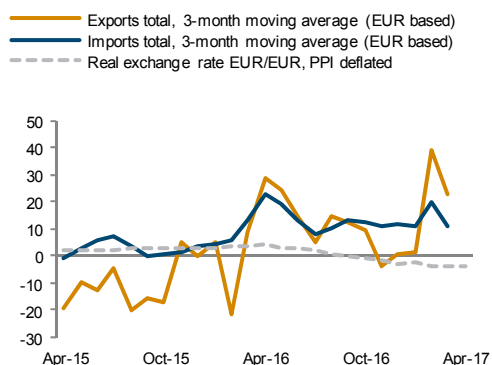
Fiscal and monetary policy

in %



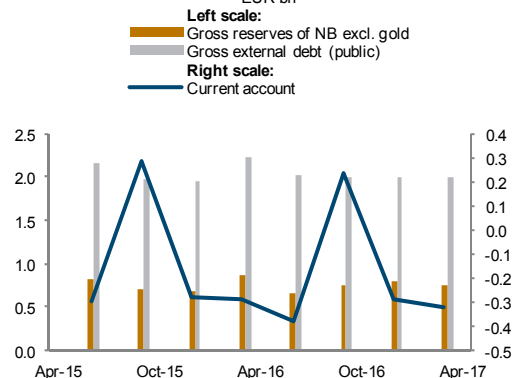
External sector development

annual growth rate in %



External finance

EUR bn



*Positive values of the productivity component on the graph reflect decline in productivity and vice versa.

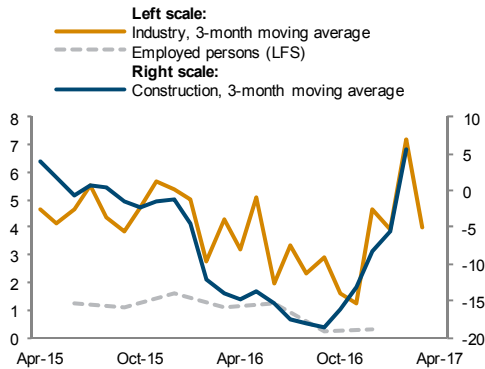
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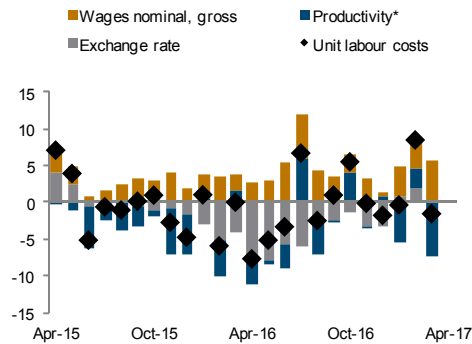
<https://data.wiiw.ac.at/monthly-database.html>

Poland

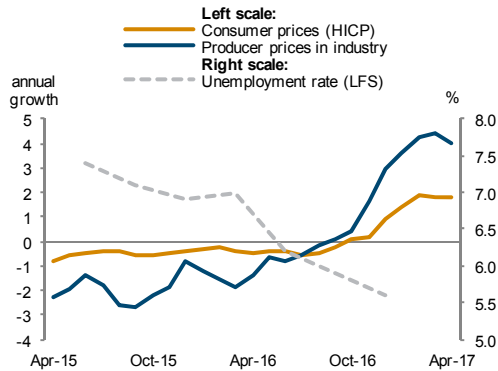
Real sector development
annual growth rate in %



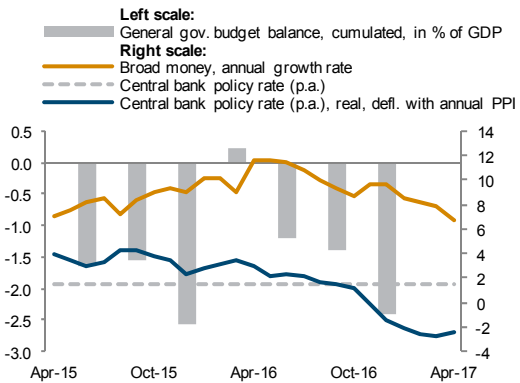
Unit labour costs in industry
annual growth rate in %



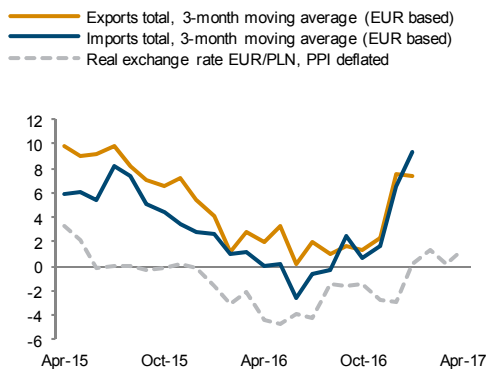
Inflation and unemployment
in %



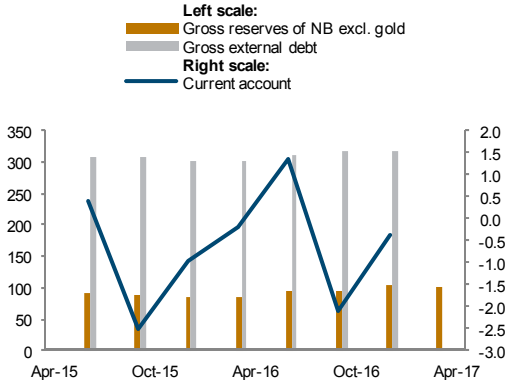
Fiscal and monetary policy
in %



External sector development
annual growth rate in %



External finance
EUR bn



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Source: wiiw Monthly Database incorporating Eurostat and national statistics.

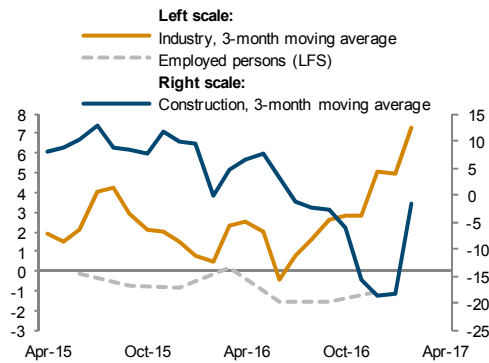
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Romania

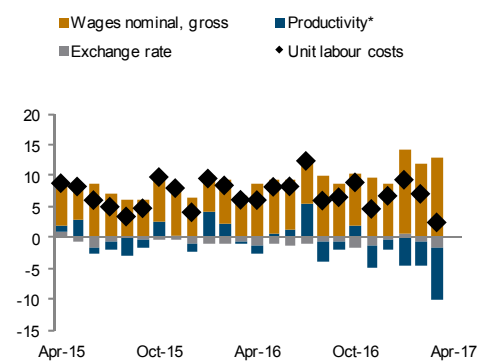
Real sector development

annual growth rate in %



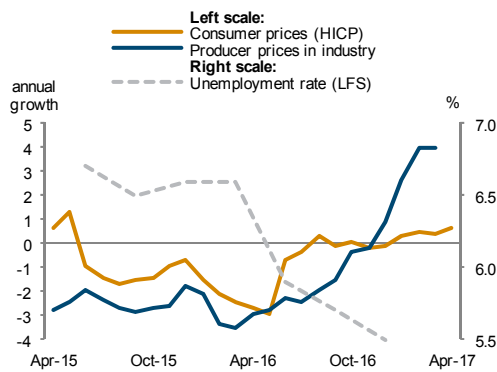
Unit labour costs in industry

annual growth rate in %



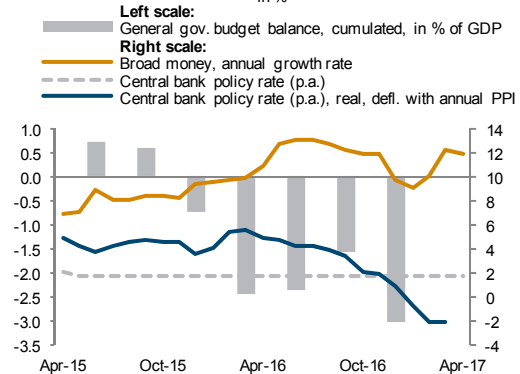
Inflation and unemployment

in %



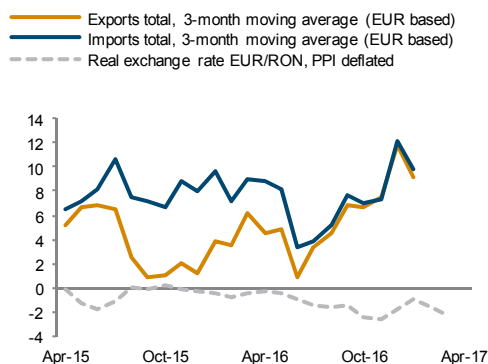
Fiscal and monetary policy

in %



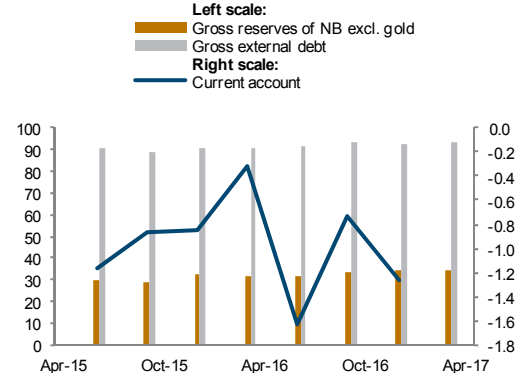
External sector development

annual growth rate in %



External finance

EUR bn



*Positive values of the productivity component on the graph reflect decline in productivity and vice versa.

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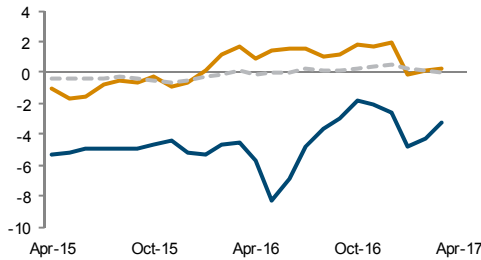
<https://data.wiiw.ac.at/monthly-database.html>

Russia

Real sector development

annual growth rate in %

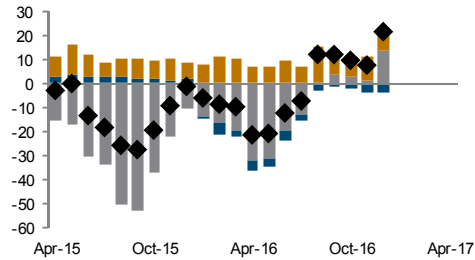
- Industry, 3-month moving average
- Construction, 3-month moving average
- - - Employed persons (LFS)



Unit labour costs in industry

annual growth rate in %

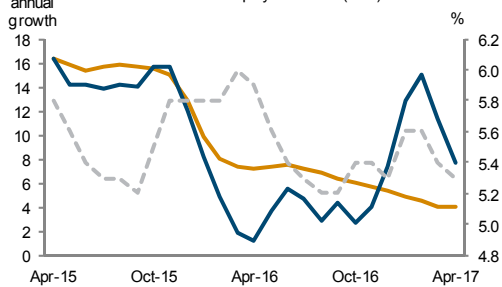
- Wages nominal, manuf., gross
- Exchange rate
- ◆ Productivity*
- ◆ Unit labour costs



Inflation and unemployment

in %

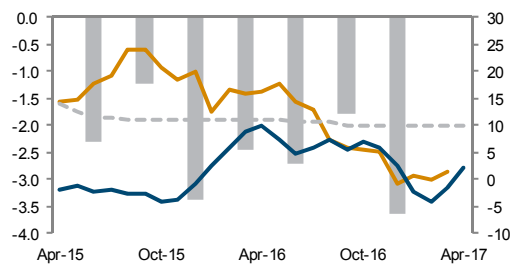
- Consumer prices
- Producer prices in industry
- - - Unemployment rate (LFS)



Fiscal and monetary policy

in %

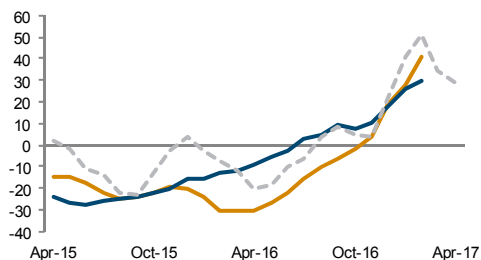
- General gov. budget balance, cumulated, in % of GDP
- M2, annual growth rate
- - - Central bank policy rate (p.a.)
- Central bank policy rate (p.a.), real, defl. with annual PPI



External sector development

annual growth rate in %

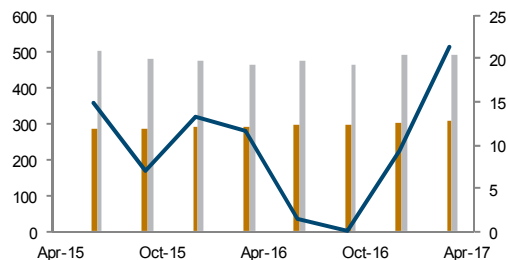
- Exports total, 3-month moving average (EUR based)
- Imports total, 3-month moving average (EUR based)
- - - Real exchange rate EUR/RUB, PPI deflated



External finance

EUR bn

- Gross reserves of NB excl. gold
- Gross external debt
- Current account



*Positive values of the productivity component on the graph reflect decline in productivity and vice versa.

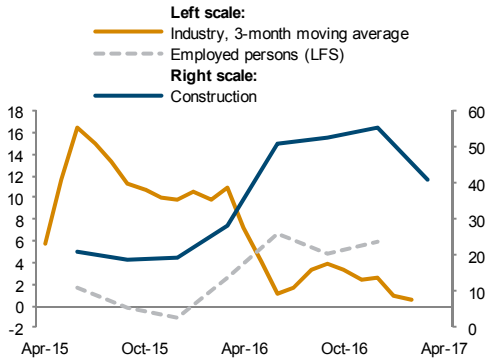
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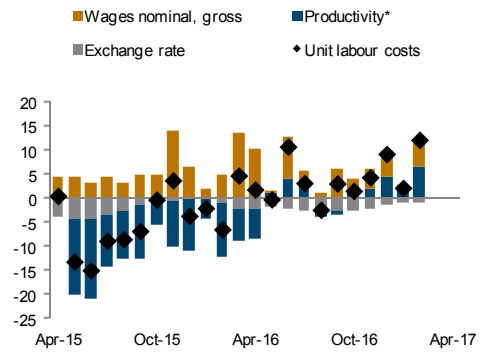
<https://data.wiiw.ac.at/monthly-database.html>

Serbia

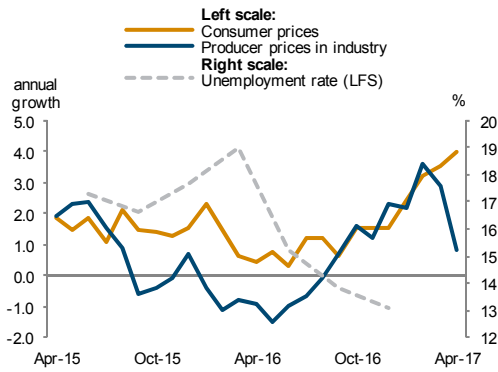
Real sector development
annual growth rate in %



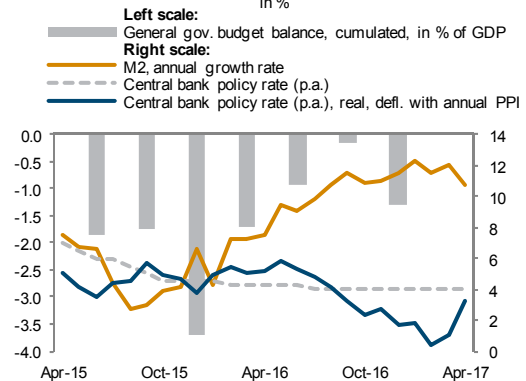
Unit labour costs in industry
annual growth rate in %



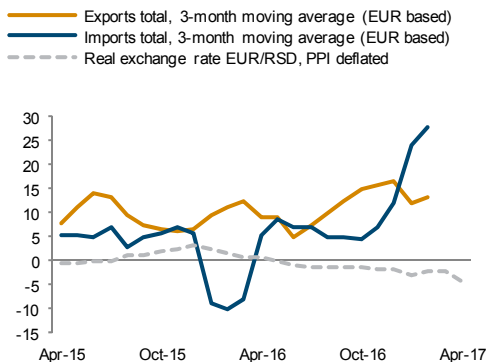
Inflation and unemployment
in %



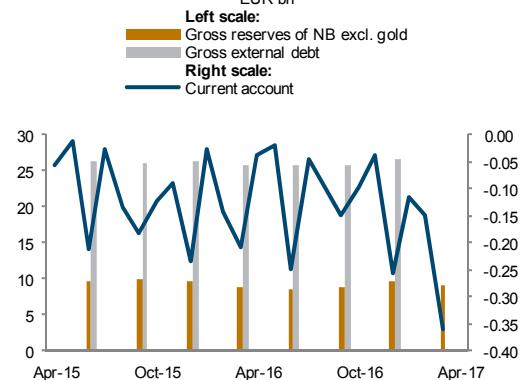
Fiscal and monetary policy
in %



External sector development
annual growth rate in %



External finance
EUR bn



*Positive values of the productivity component on the graph reflect decline in productivity and vice versa.

Source: wiiw Monthly Database incorporating Eurostat and national statistics.

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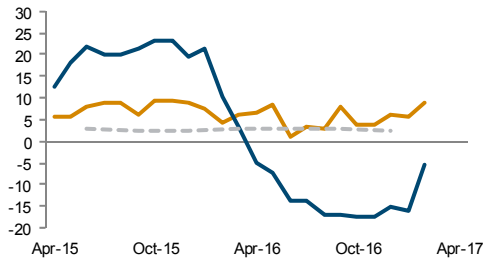
<https://data.wiiw.ac.at/monthly-database.html>

Slovakia

Real sector development

annual growth rate in %

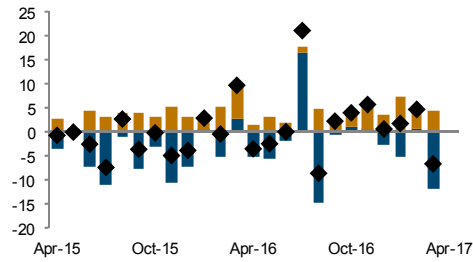
- Industry, 3-month moving average
- Construction, 3-month moving average
- Employed persons (LFS)



Unit labour costs in industry

annual growth rate in %

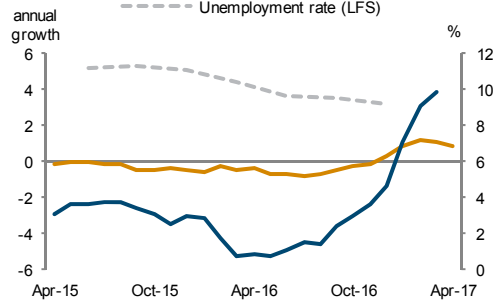
- Wages nominal, gross
- Productivity*
- Unit labour costs



Inflation and unemployment

in %

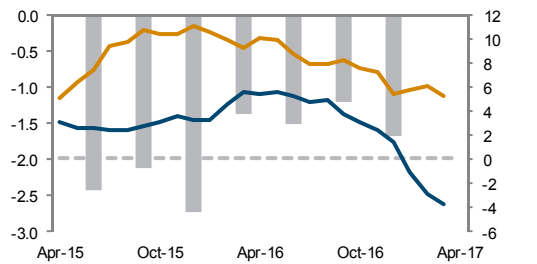
- Left scale:** Consumer prices (HICP), Producer prices in industry
- Right scale:** Unemployment rate (LFS)



Fiscal and monetary policy

in %

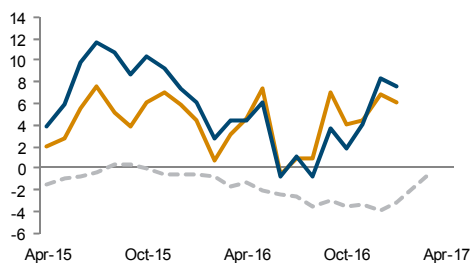
- Left scale:** General gov. budget balance, cumulated, in % of GDP
- Right scale:** Broad money, annual growth rate, Central bank policy rate (p.a.), Central bank policy rate (p.a.), real, defl. with annual PPI



External sector development

annual growth rate in %

- Exports total, 3-month moving average (EUR based)
- Imports total, 3-month moving average (EUR based)
- Real exchange rate EUR/EUR, PPI deflated



External finance

EUR bn

- Left scale:** Gross external debt
- Right scale:** Current account



*Positive values of the productivity component on the graph reflect decline in productivity and vice versa.

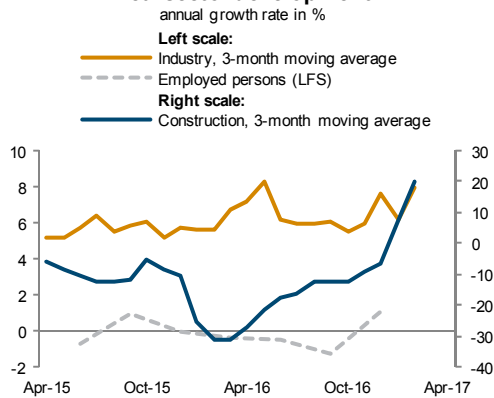
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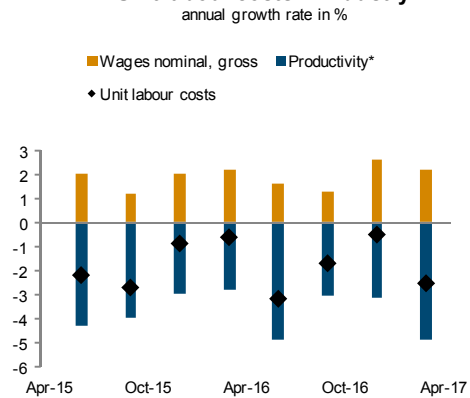
<https://data.wiiw.ac.at/monthly-database.html>

Slovenia

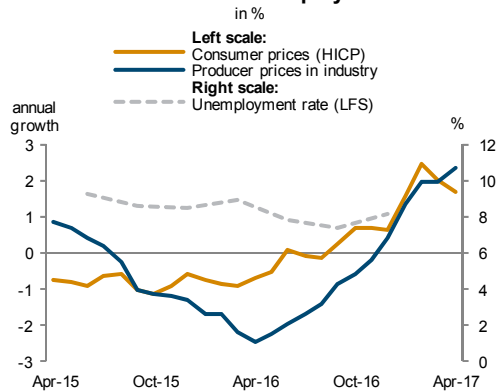
Real sector development



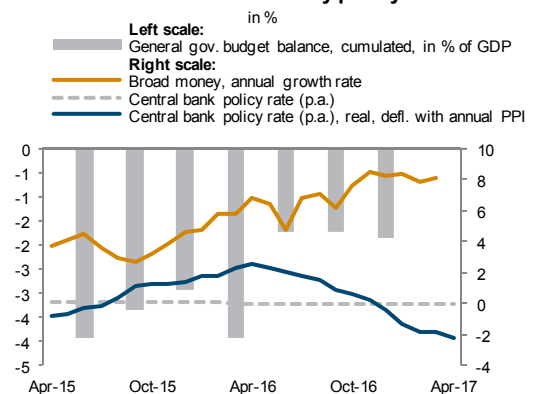
Unit labour costs in industry



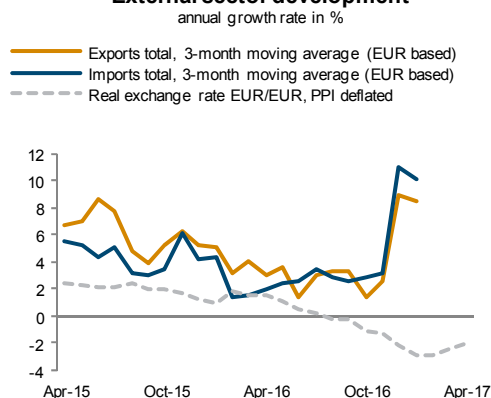
Inflation and unemployment



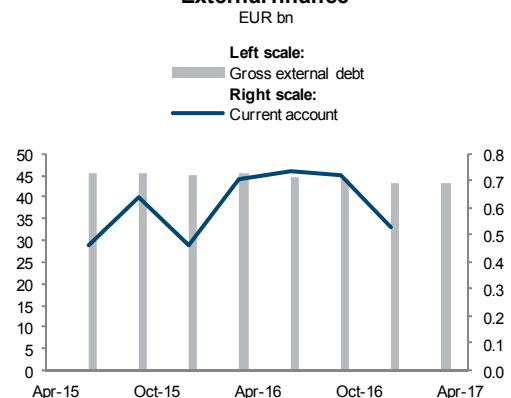
Fiscal and monetary policy



External sector development



External finance



*Positive values of the productivity component on the graph reflect decline in productivity and vice versa.

Source: wiiw Monthly Database incorporating Eurostat and national statistics.

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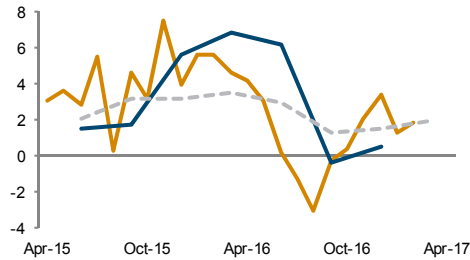
<https://data.wiiw.ac.at/monthly-database.html>

Turkey

Real sector development

annual growth rate in %

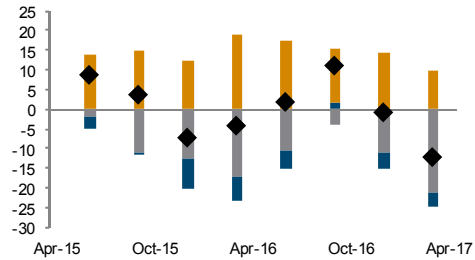
- Industry, 3-month moving average
- Construction
- - - Employed persons (LFS)



Unit labour costs in industry

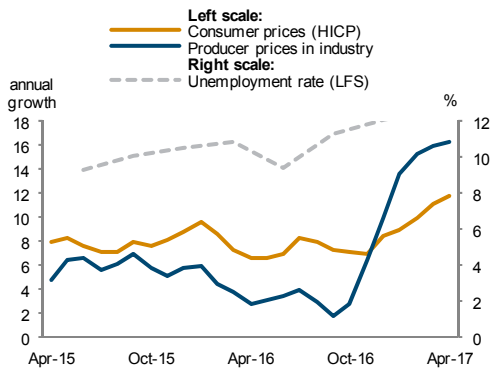
annual growth rate in %

- Wages nominal, gross
- Exchange rate
- Productivity*
- ◆ Unit labour costs



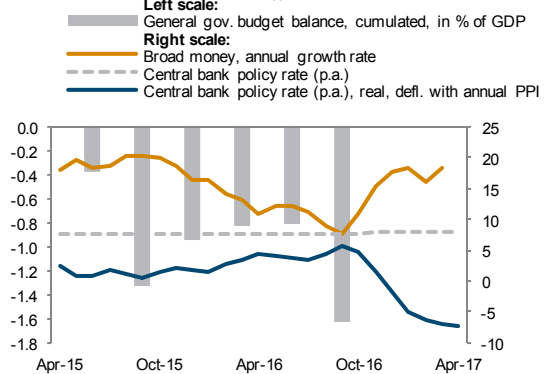
Inflation and unemployment

in %



Fiscal and monetary policy

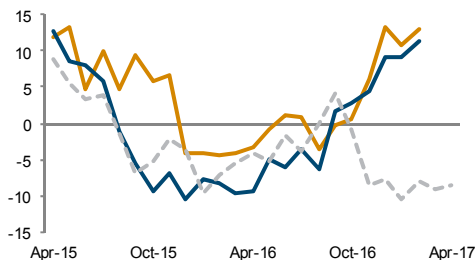
in %



External sector development

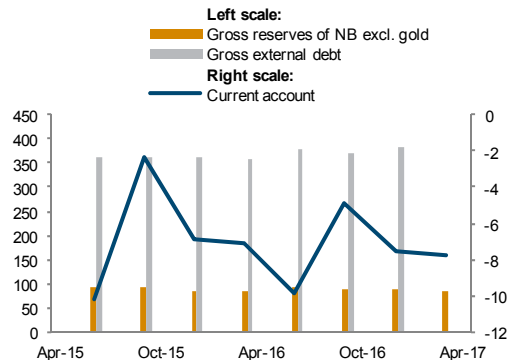
annual growth rate in %

- Exports total, 3-month moving average (EUR based)
- Imports total, 3-month moving average (EUR based)
- - - Real exchange rate EUR/TRY, PPI deflated



External finance

EUR bn



*Positive values of the productivity component on the graph reflect decline in productivity and vice versa.

Source: wiiw Monthly Database incorporating Eurostat and national statistics.

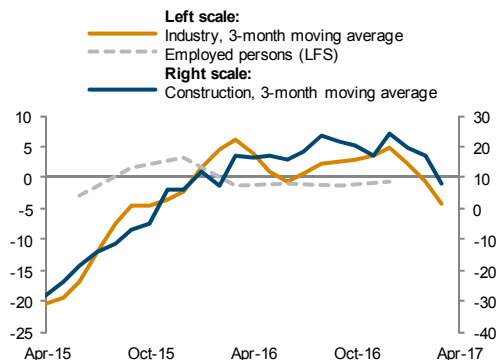
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Ukraine

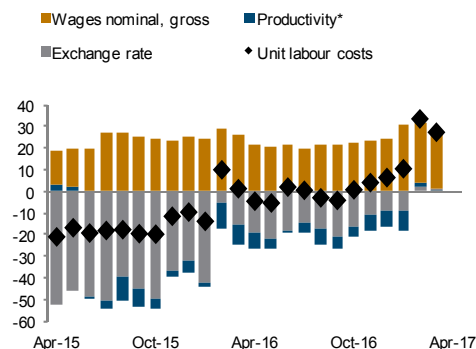
Real sector development

annual growth rate in %



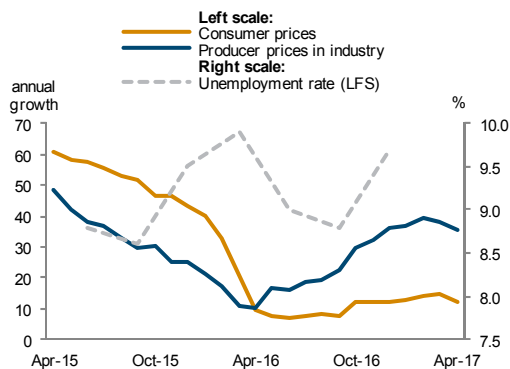
Unit labour costs in industry

annual growth rate in %



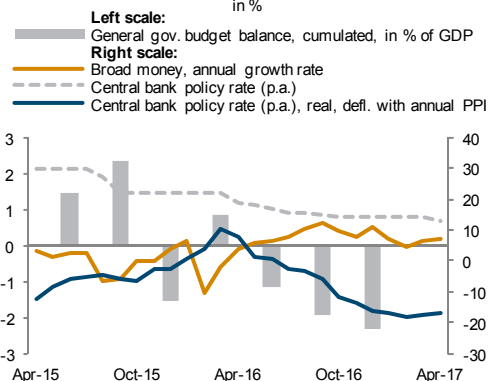
Inflation and unemployment

in %



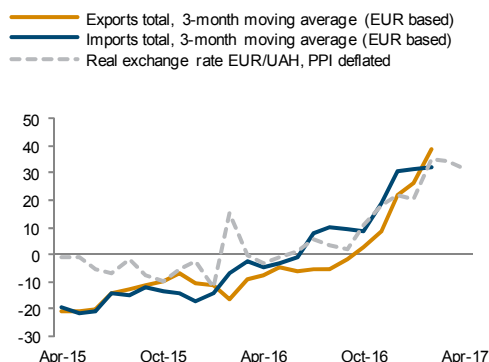
Fiscal and monetary policy

in %



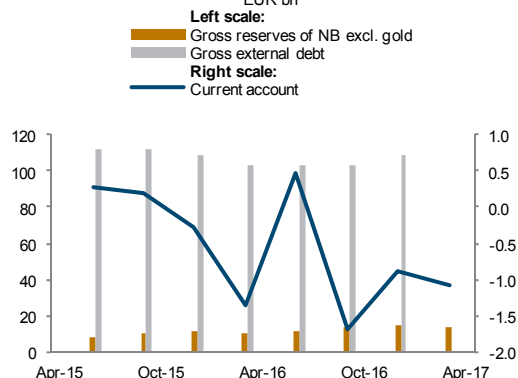
External sector development

annual growth rate in %



External finance

EUR bn



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